

# The catalogue of types of geometric neighbors over four variables

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# Introduction

This is a catalogue of types of differential imsets (for standard imsets that are geometric neighbors) over 4 variables. The catalogue is meant as an extension of the paper

M. Studený, J. Vomlel: On open questions in the geometric approach to structural learning Bayesian nets, submitted to International Journal of Approximate Reasoning, special issue WUPES 09.

The motivation and deeper theoretical background is explained in that paper, including rough description of the catalogue in Section 5.2.

Recall that the items in our catalogue are types (= permutation equivalence classes) of differential imsets over 4 variables for those standard imsets that are geometric neighbors. Altogether we have 319 of such types, that is, 319 items in the catalogue.

Each type is described (in the catalogue) by one representative (= a member of the respective permutation equivalence class). It is a differential imset  $w = u - v$ , where  $u, v$  are standard imsets over  $N = \{a, b, c, d\}$  that are geometric neighbors. The items are classified using three criteria/characteristics:

- the *degree difference*, which takes values 0,1,2, and 3,
- the *squared Euclidean length* (of  $w$ ), whose possible values are even numbers between 4 and 22,
- the *number of non-zero values* (in  $w$ ), falling within limits 4 and 12.

Each item in the catalogue is ascribed an identification number, which is an integer between 1 and 319.

The catalogue has a form of a pdf file, which is divided into chapters, sections, subsections and sub-subsections.

- Chapters correspond to the degree difference,
- sections (within each chapter) correspond to the squared Euclidean length,
- subsections (within each section) correspond to the number of non-zero values,
- sub-subsections within each subsections correspond items of the catalogue (= types) that fall within that particular subsection.

The numbering of chapters, sections and subsections is given by the value of the respective characteristic.

One can walk through the catalogue with the help of bookmarks (available by advanced versions of Adobe Reader). The top level of those bookmarks correspond to chapters (= the degree difference). If one clicks on the chapter icon, the Adobe Reader moves to the beginning of the chapter. One can also click on the plus sign + (attached left to the chapter icon) to roll out the icons for sections available within that chapter. (These correspond to the squared Euclidean length.) Again, if one clicks on the section icon the Adobe reader moves to its beginning. Conversely, the icons for sections within a particular chapter can be back hidden if one clicks on the minus sign -, which replaced the former plus sign (attached left to the chapter icon). The same principle holds for revealing (and hiding) subsections within sections and items within subsections.

Thus, the leaves of that virtual tree are items in the catalogue. Each such item contains the following information:

- Hasse diagram (over  $N = \{a, b, c, d\}$ ) of the differential imset  $w$  (that was chosen to represent that particular type)
- record of (the same)  $w$  in terms of basic imsets, that is, in terms of  $\delta_A$  notation,
- one of the shortest possible combinations of elementary imsets (with  $\pm 1$  coefficients) giving  $w$  (see Section 5.1 of the paper for an explanation),

- the list of all pairs of standard imsets  $[u, v]$  that are geometric neighbors and yield  $w$  as their differential imset  $w = u - v$ ,
- the essential graphs for those (pairs of) standard imsets.

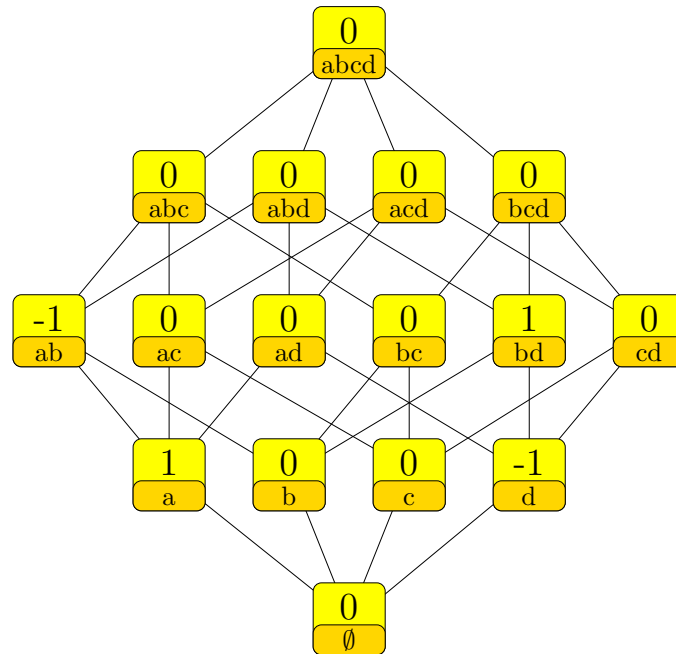
# Chapter 0

## Degree difference 0

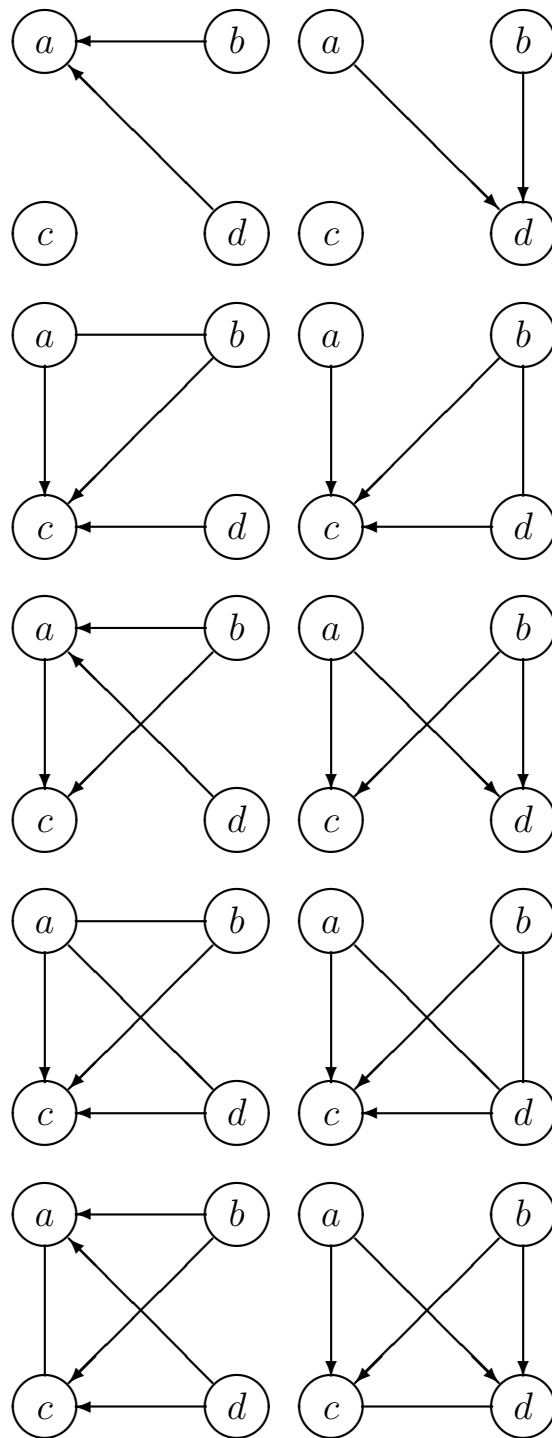
### 0.4 Squared Euclidean length 4

#### 0.4.4 Number of nonzero values 4

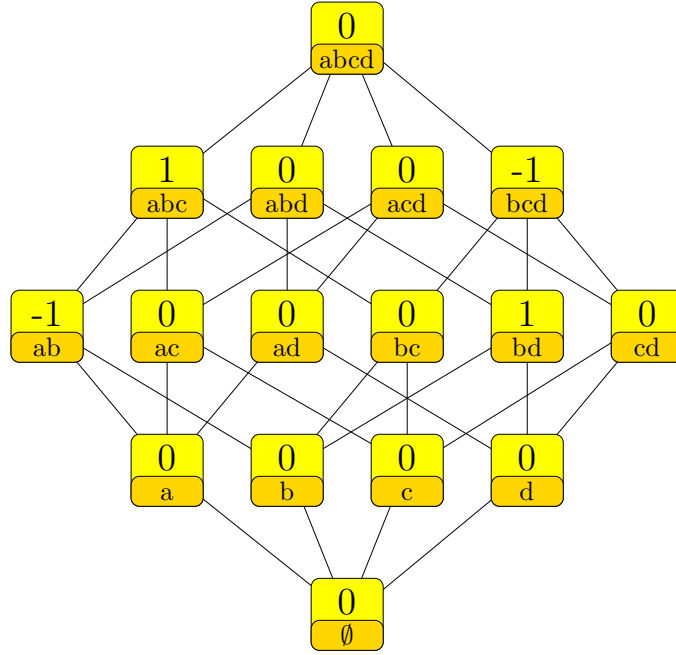
##### 0.4.4.1 Differential imset (1)



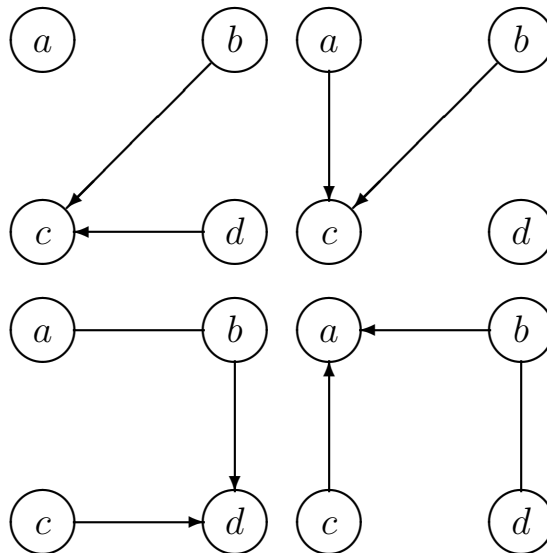
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$

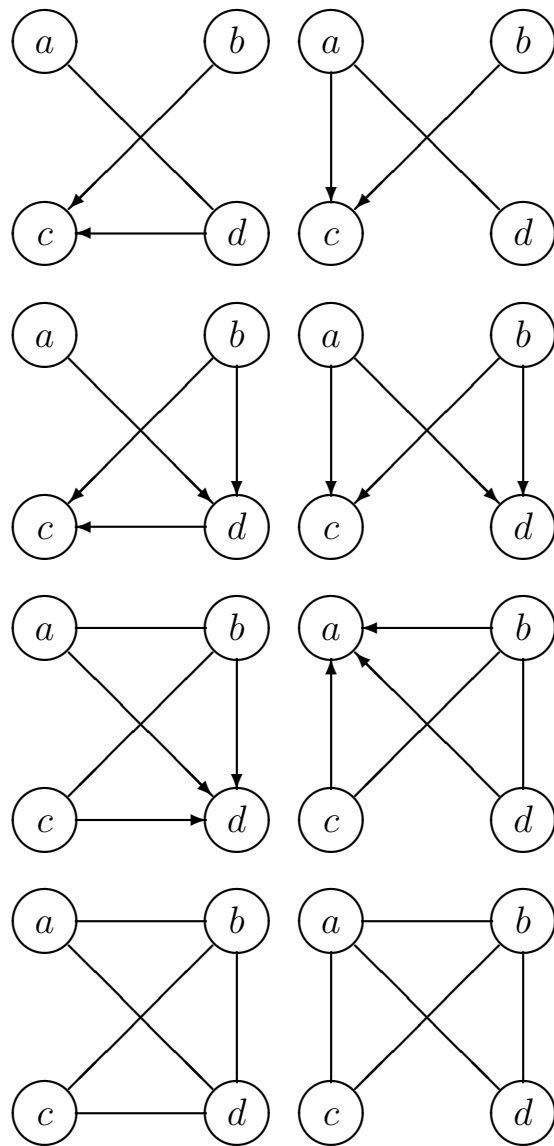


0.4.4.2 Differential inset (2)



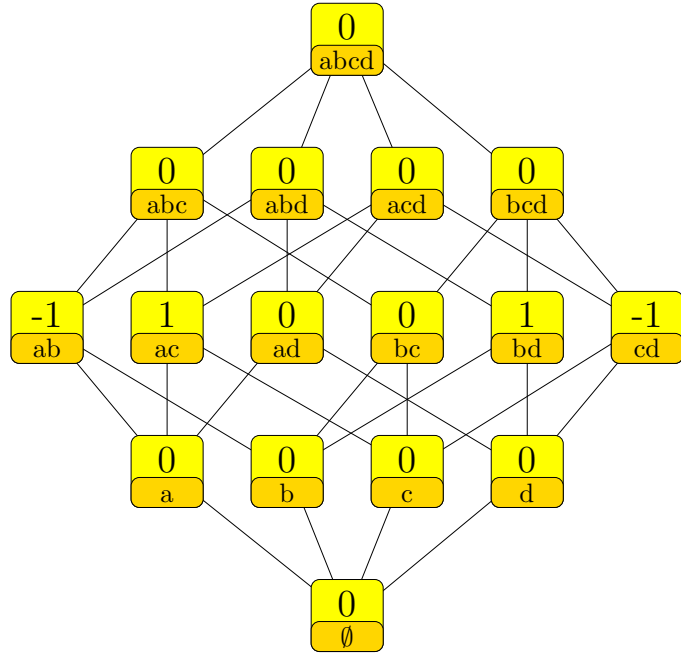
$$\begin{aligned}
 & -\delta_{\{a,b\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



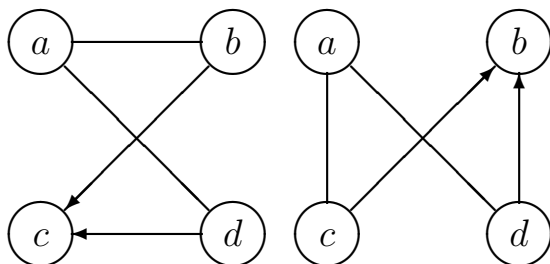
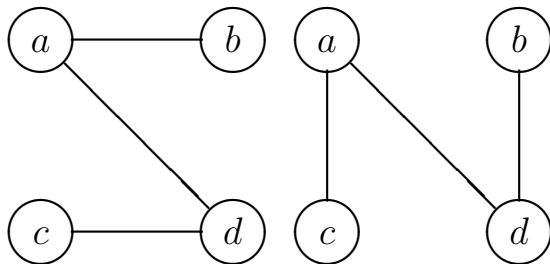


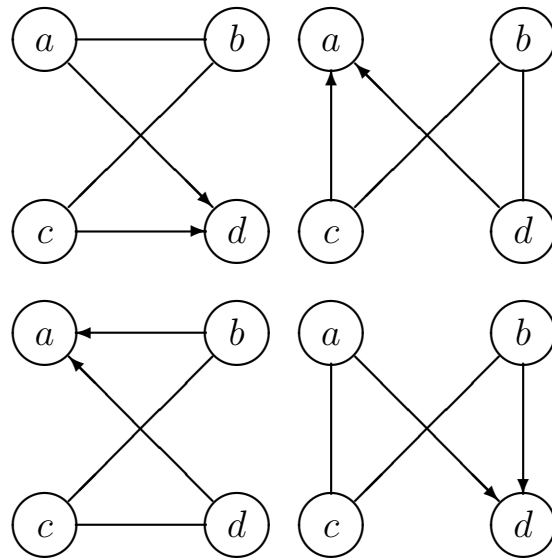


0.4.4.3 Differential inset (3)

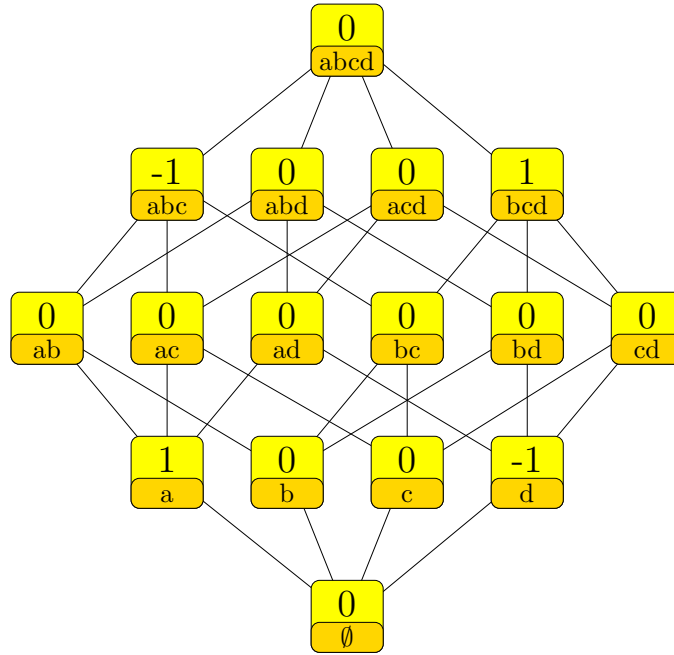


$$\begin{aligned}
 & -\delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,b|d \rangle} + u_{\langle a,c|d \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{c\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

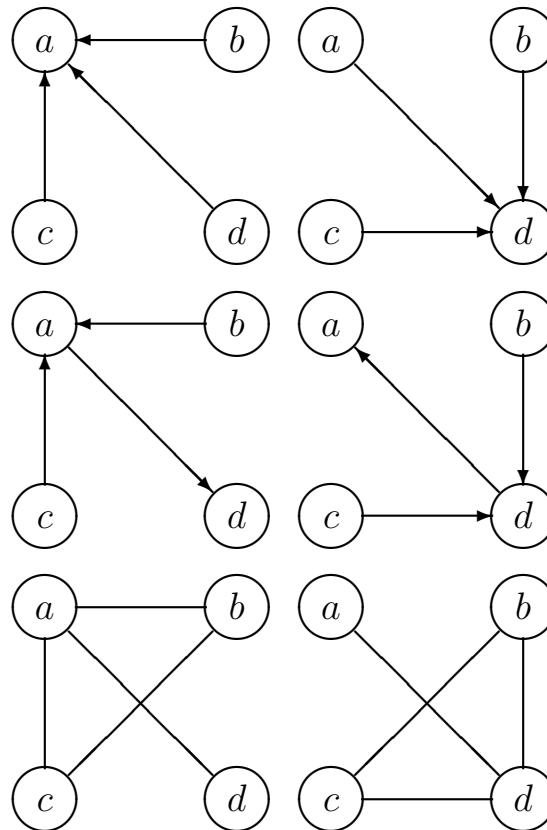




0.4.4.4 Differential inset (4)



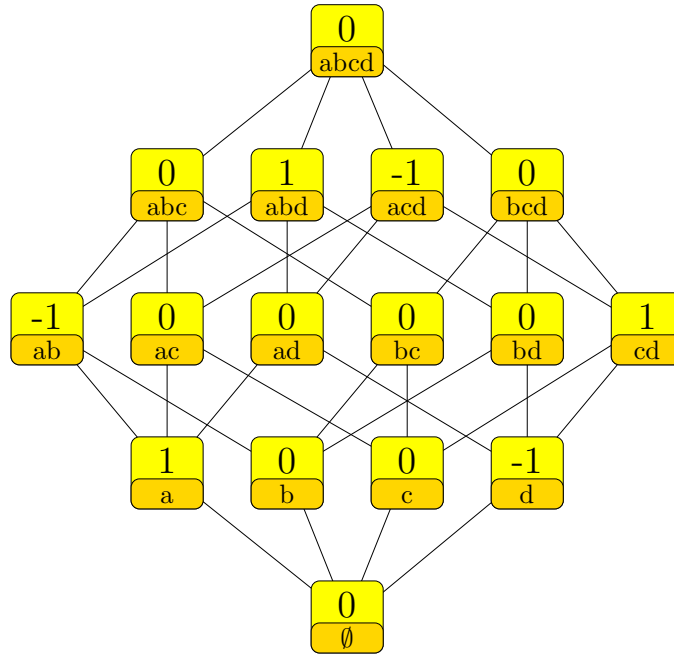
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle a,c|bd \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



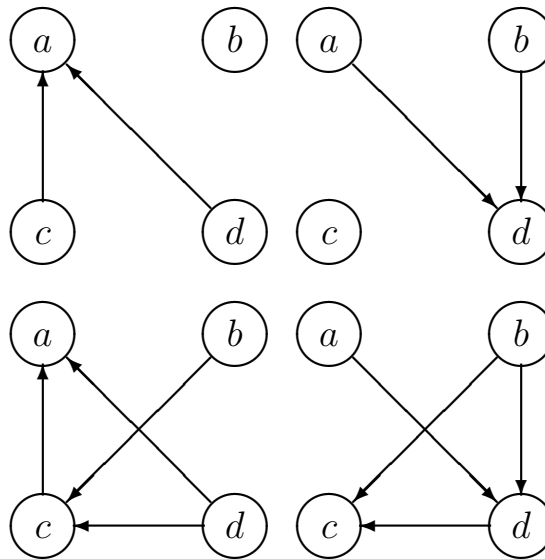
## 0.6 Squared Euclidean length 6

### 0.6.6 Number of nonzero values 6

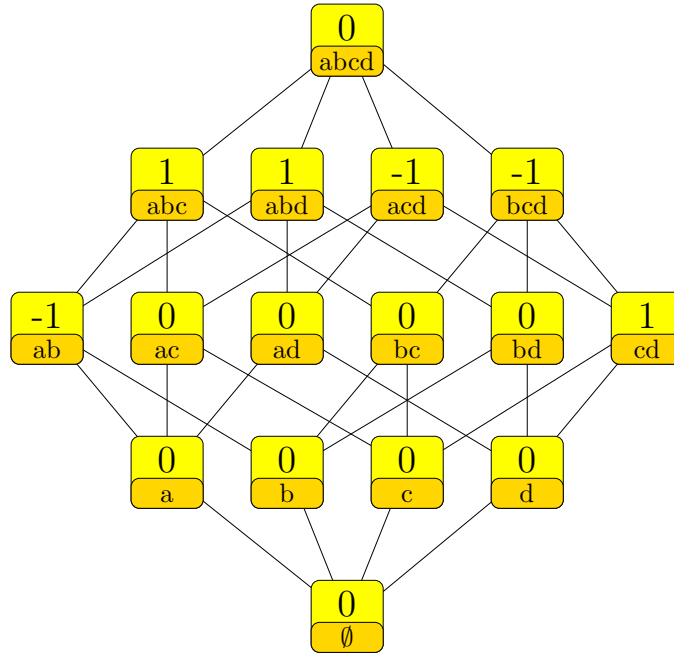
#### 0.6.6.1 Differential inset (5)



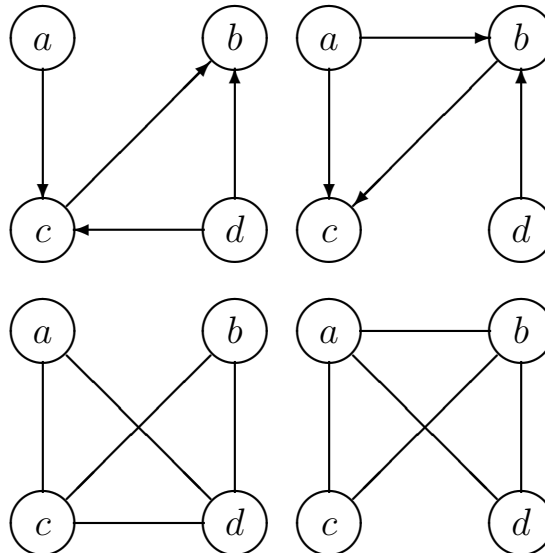
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle b,d|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



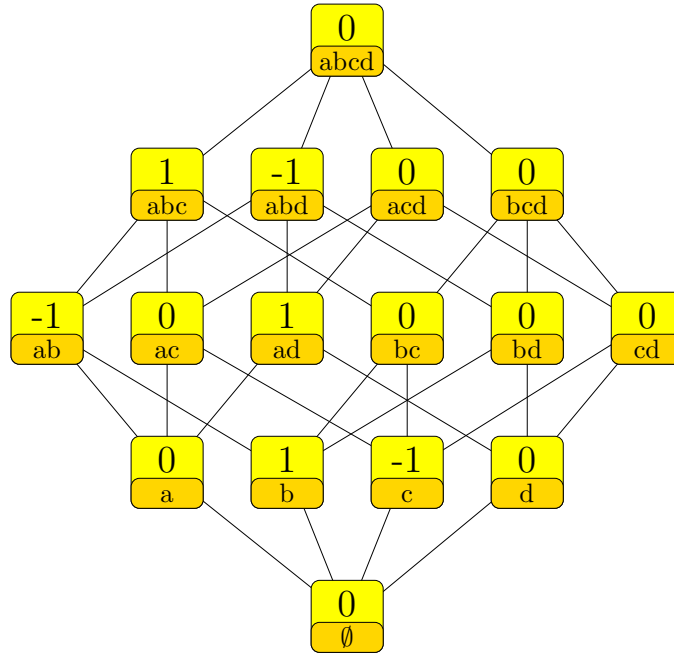
0.6.6.2 Differential inset (6)



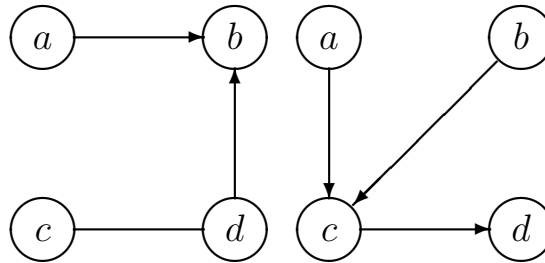
$$\begin{aligned}
 & -\delta_{\{a,b\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



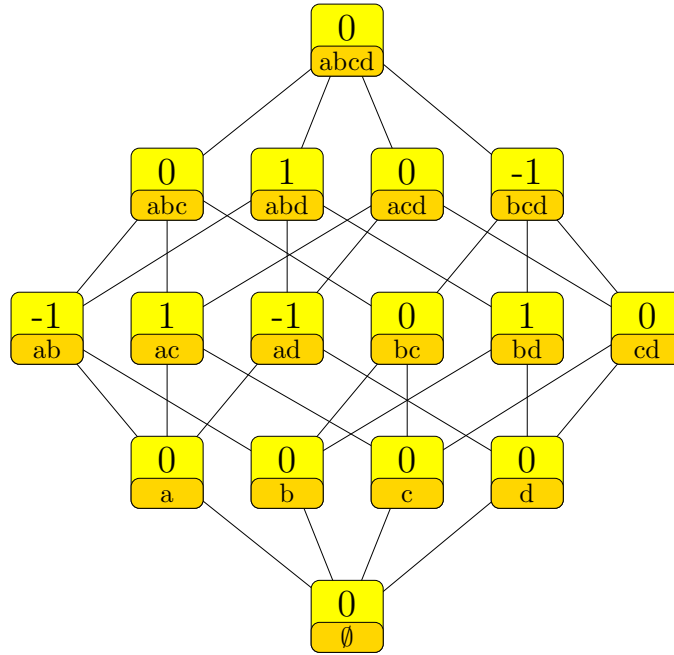
0.6.6.3 Differential inset (7)



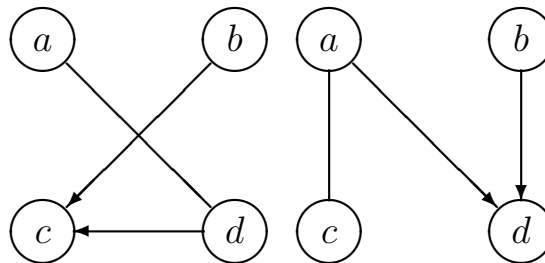
$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|ad \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



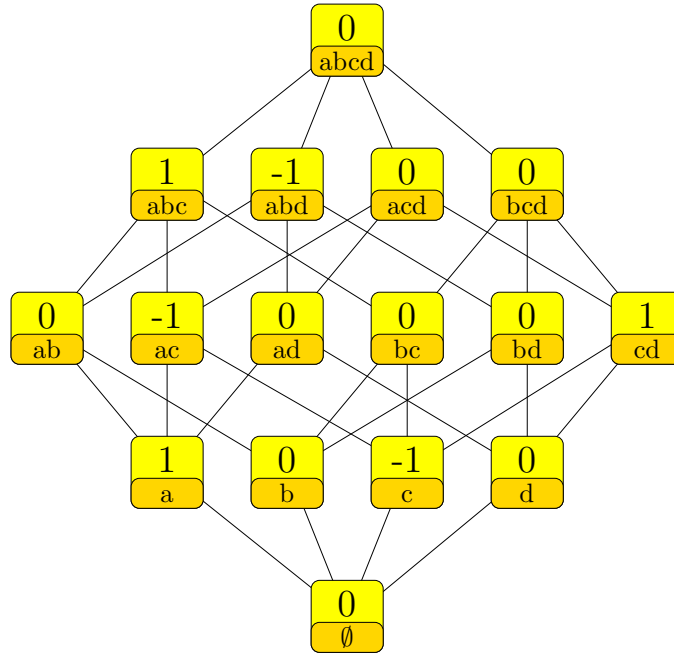
0.6.6.4 Differential inset (8)



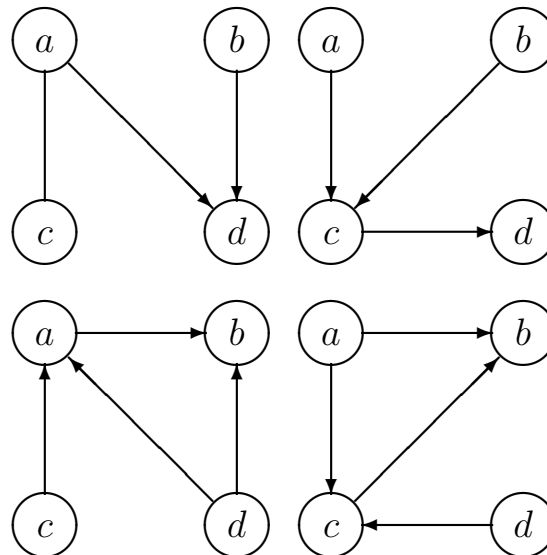
$$\begin{aligned}
 & -\delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.6.6.5 Differential imset (9)

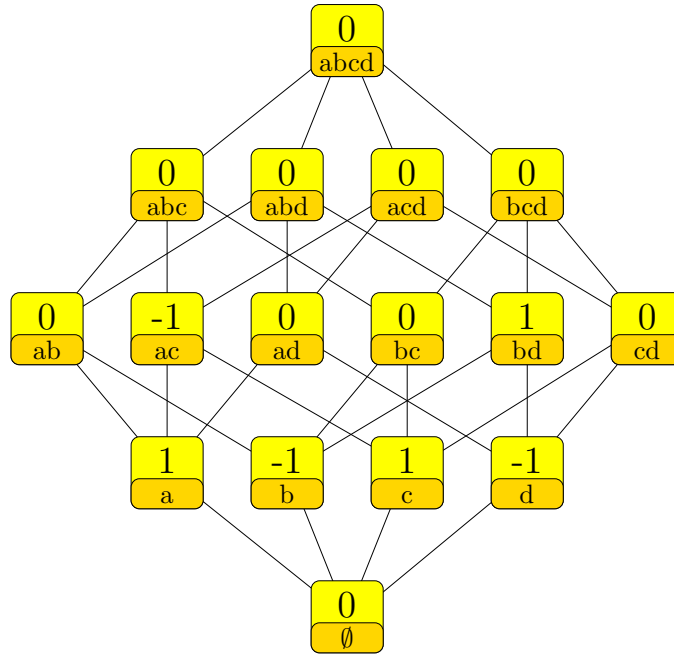


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} \\
 &= u_{\langle c,d|ab \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

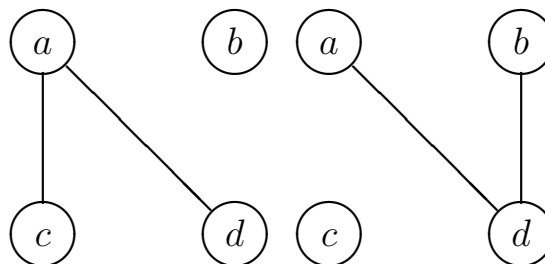


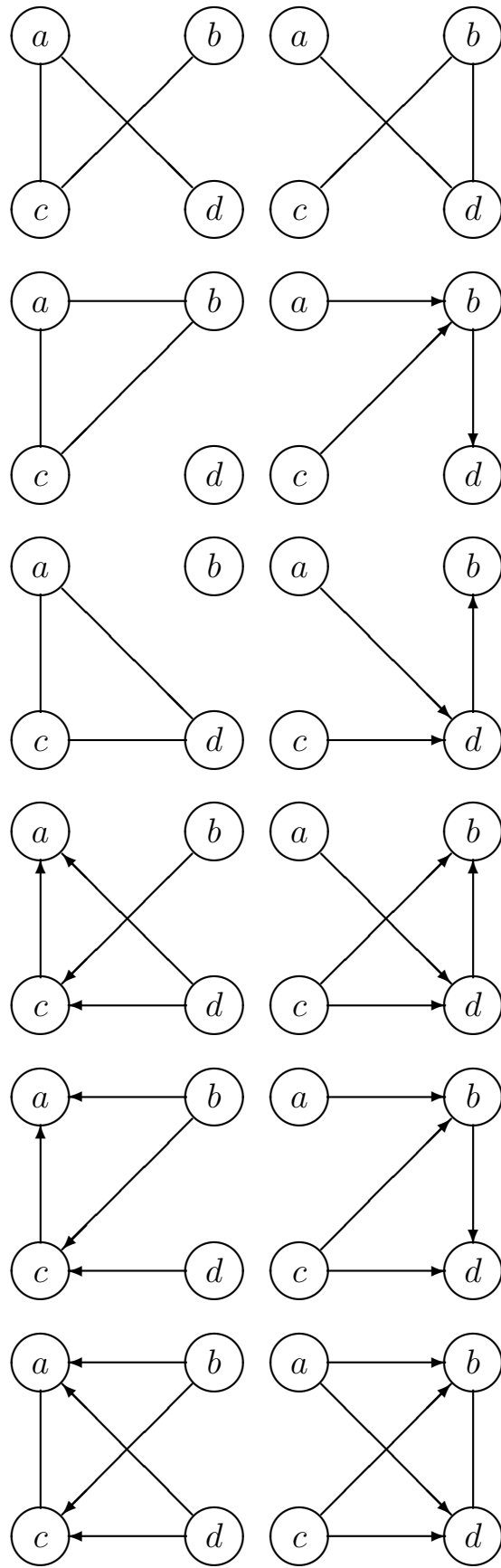


0.6.6.6 Differential inset (10)

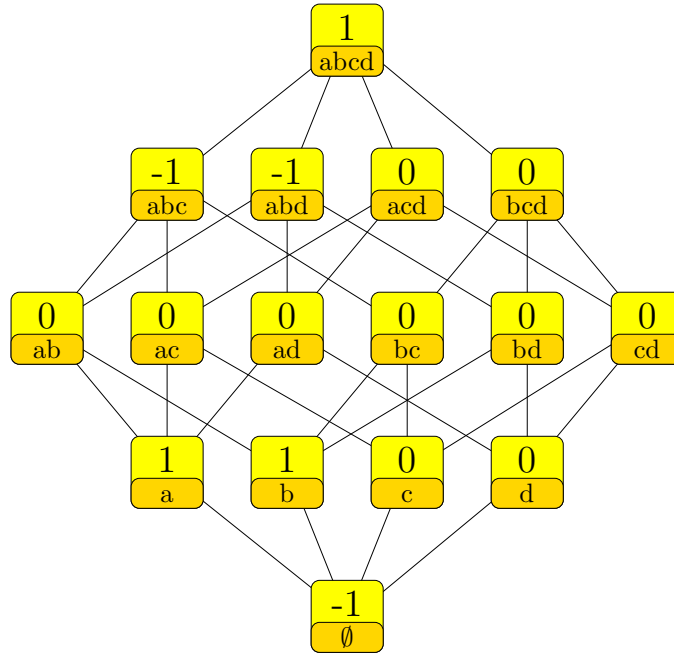


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}})
 \end{aligned}$$

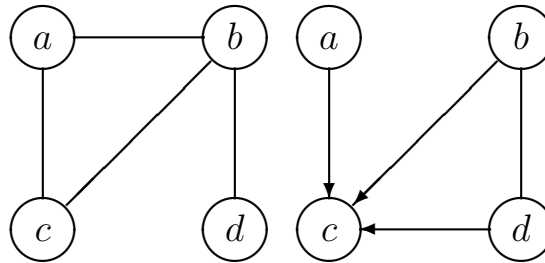




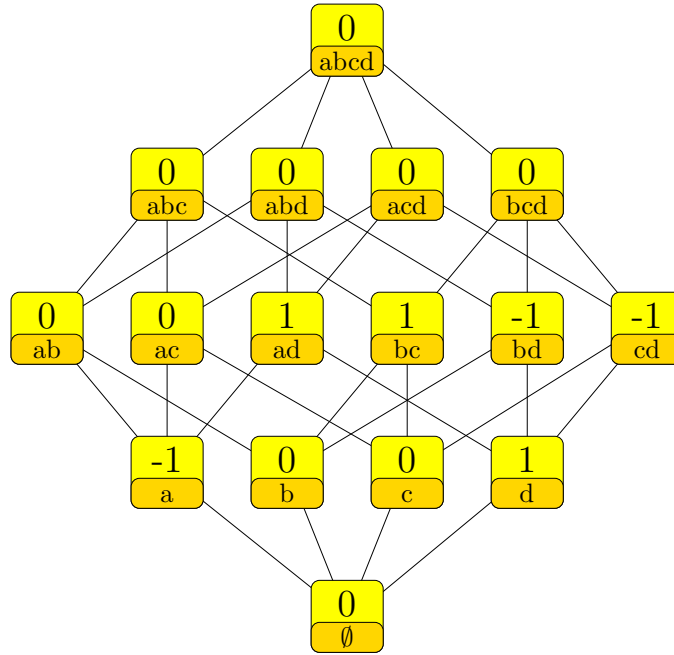
0.6.6.7 Differential inset (11)



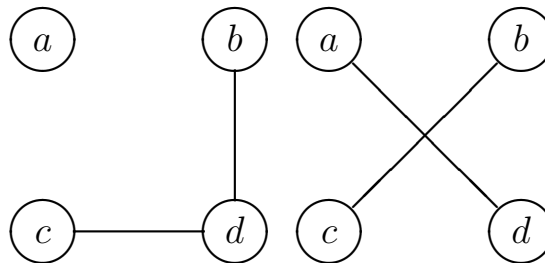
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|ab \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



0.6.6.8 Differential imset (12)



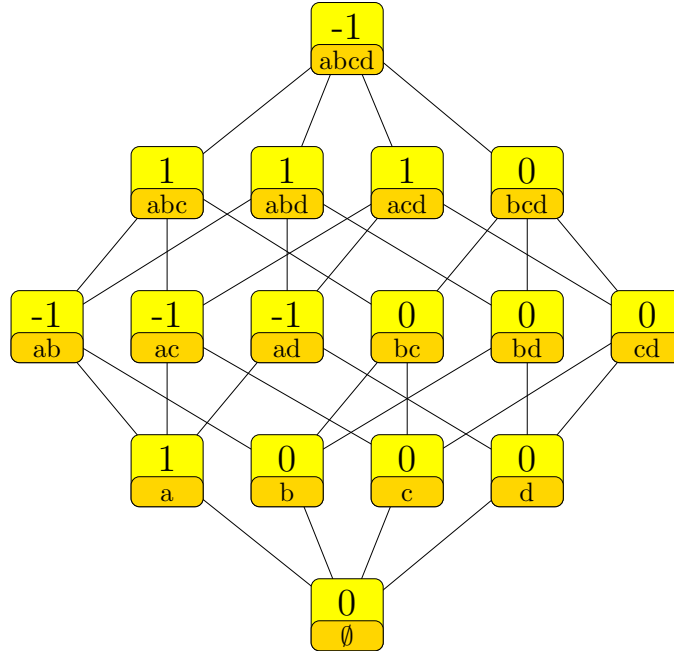
$$\begin{aligned}
 & -\delta_{\{a\}} + \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} - u_{\langle b,d|a \rangle} + u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



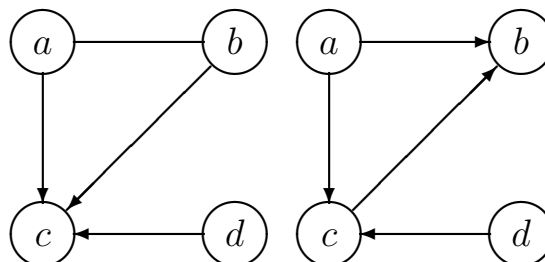
## 0.8 Squared Euclidean length 8

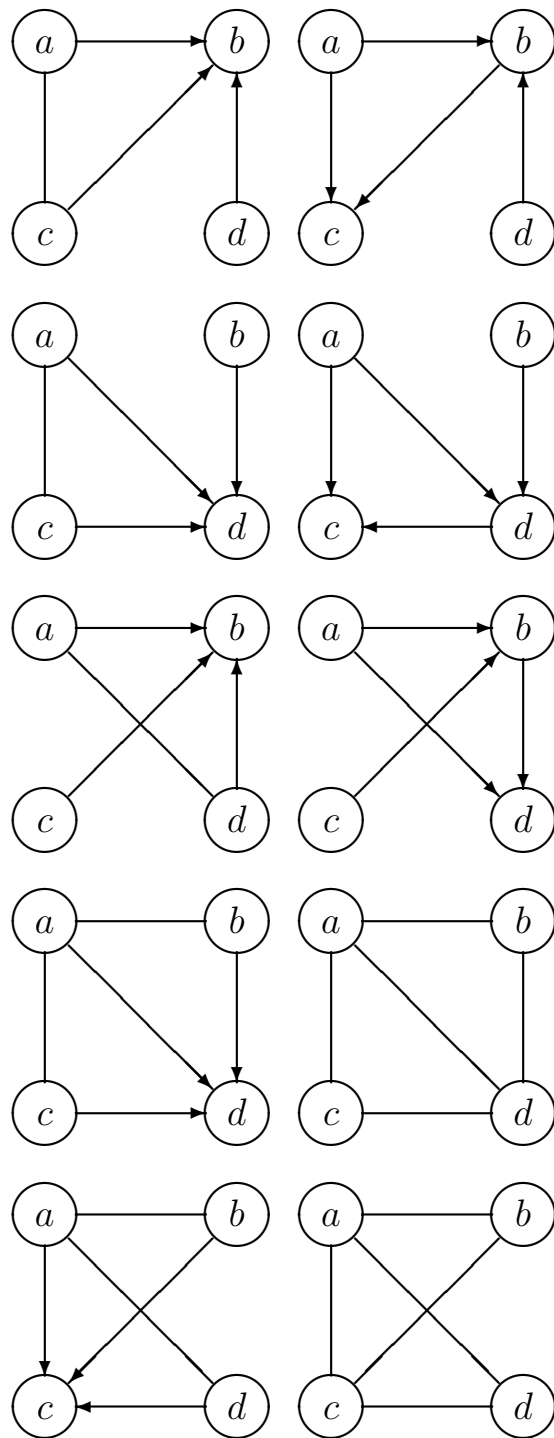
### 0.8.8 Number of nonzero values 8

#### 0.8.8.1 Differential imset (13)

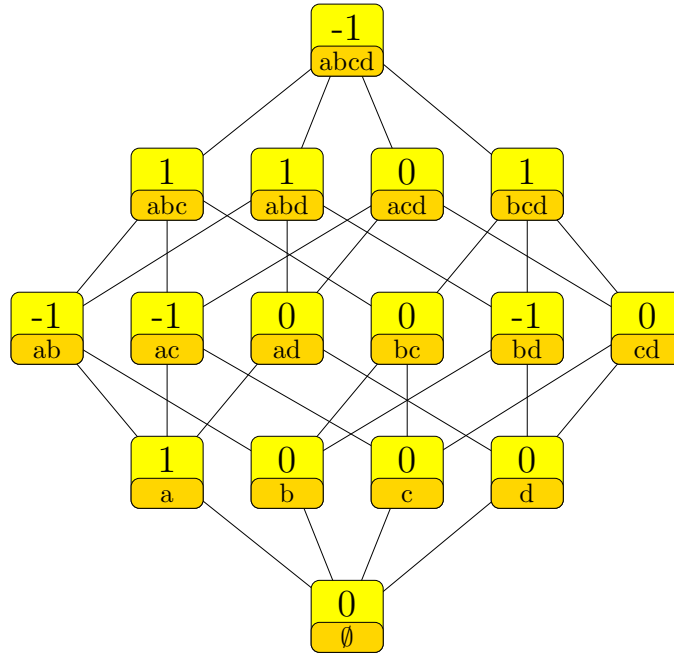


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,d|ac \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

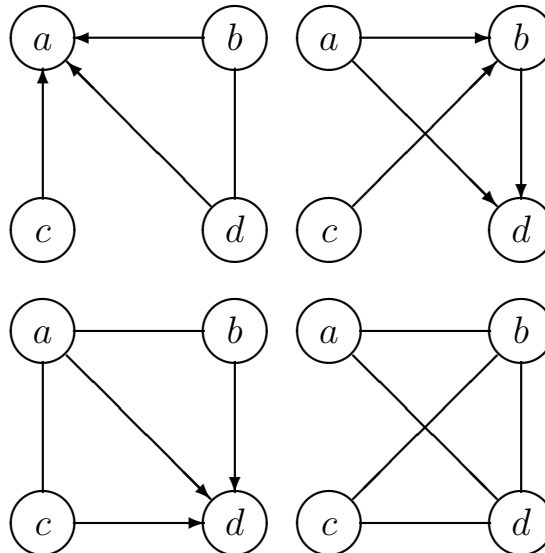




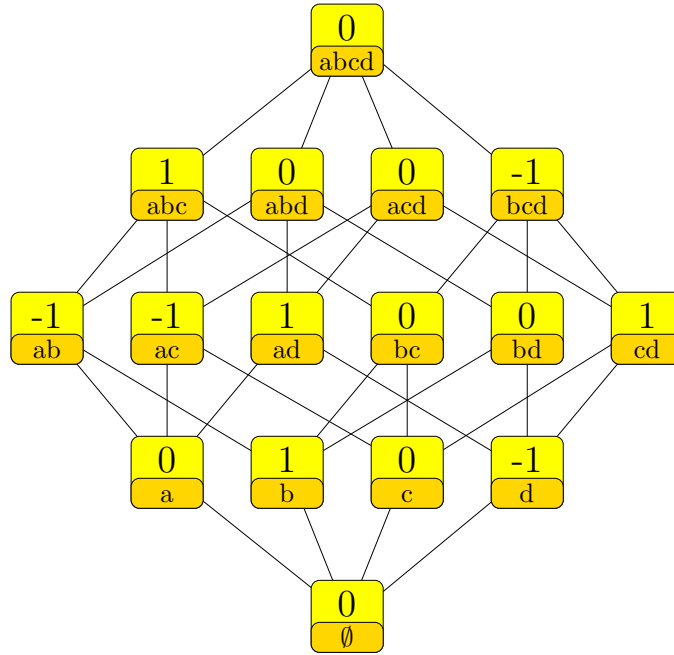
0.8.8.2 Differential inset (14)



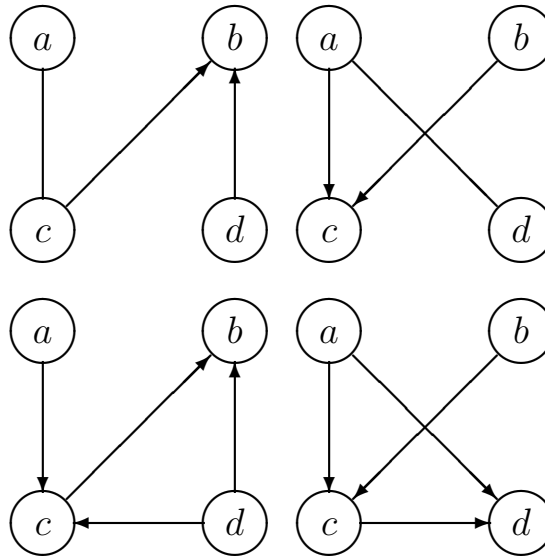
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|bd \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.8.8.3 Differential inset (15)

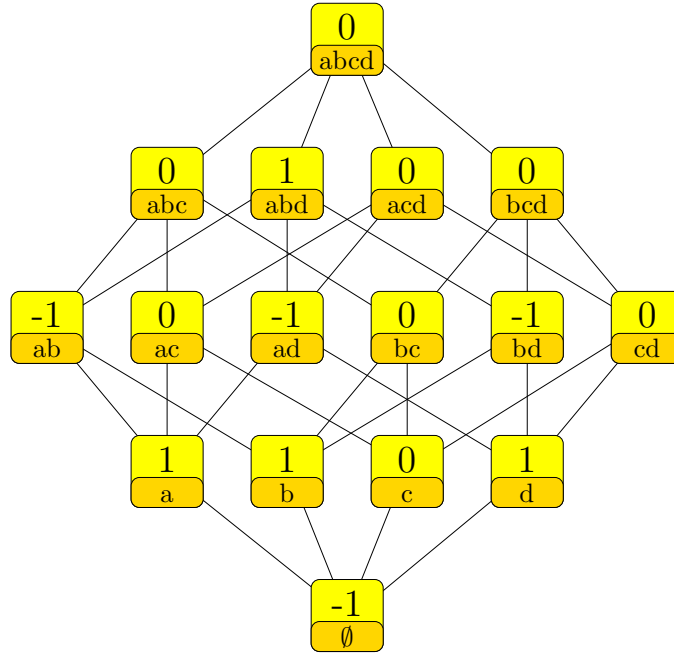


$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

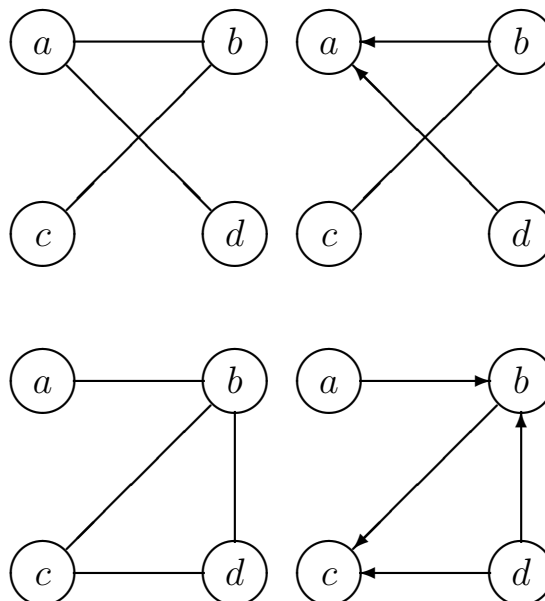


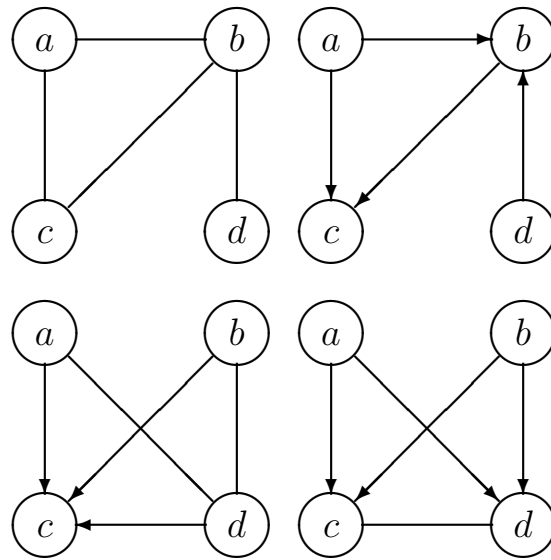


0.8.8.4 Differential inset (16)

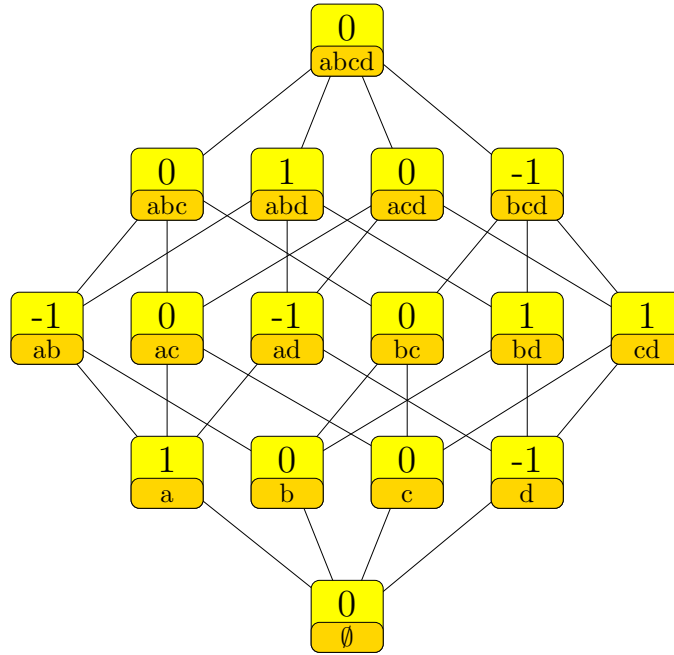


$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle b,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$

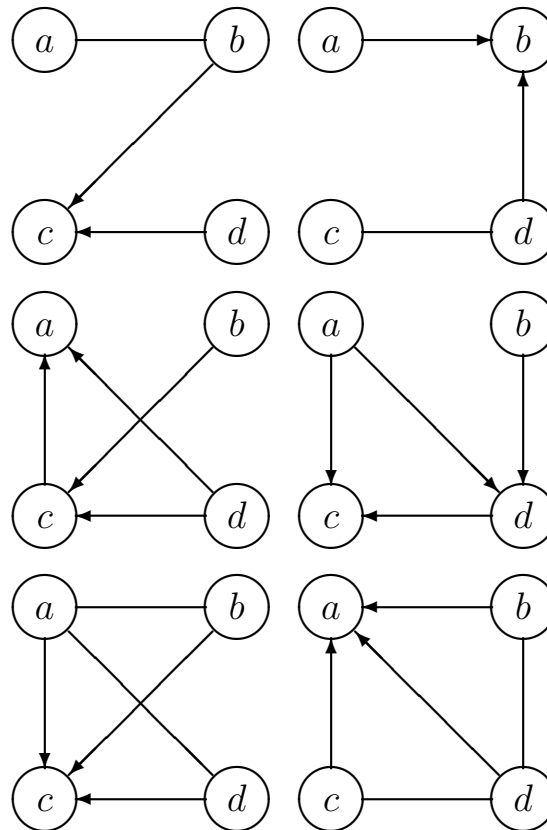




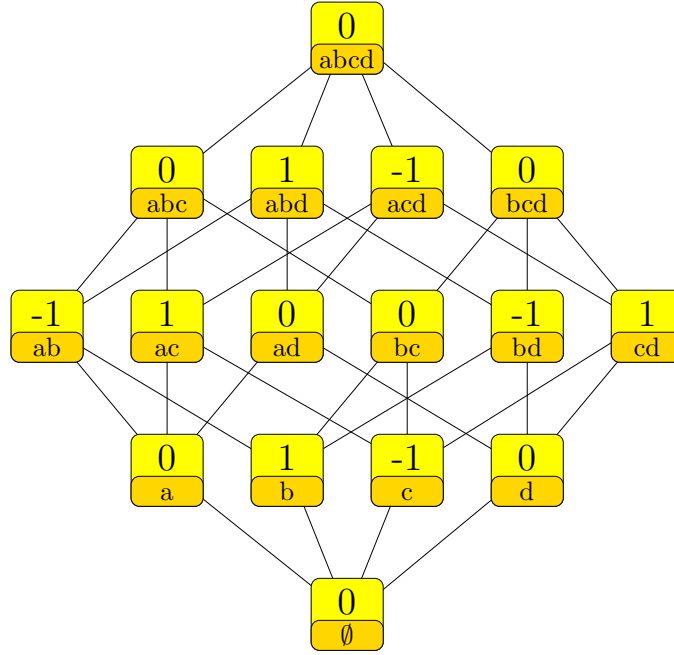
0.8.8.5 Differential inset (17)



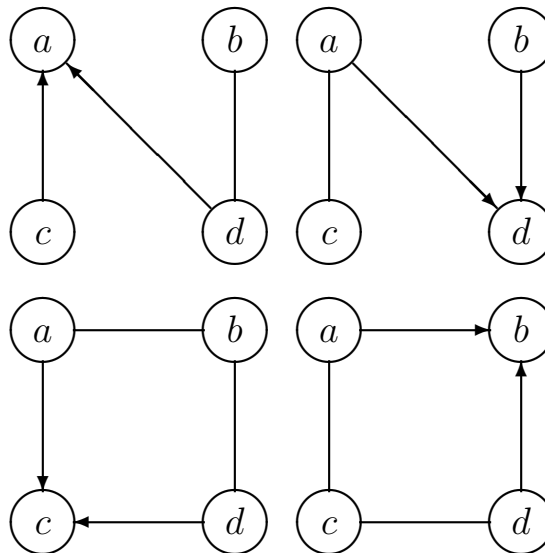
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{(b,d|a)} - u_{(b,c|d)} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$

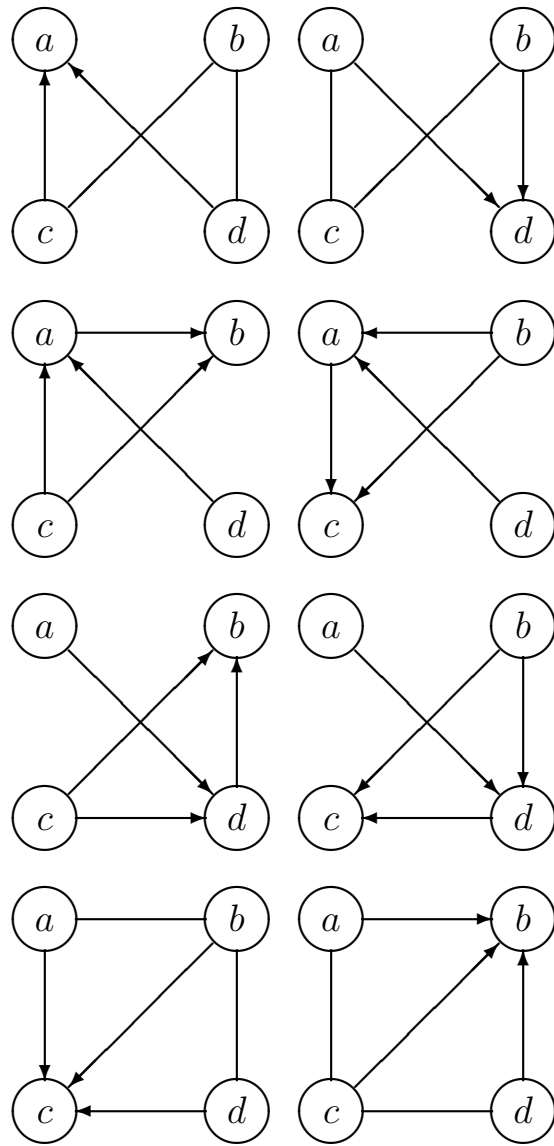


0.8.8.6 Differential inset (18)

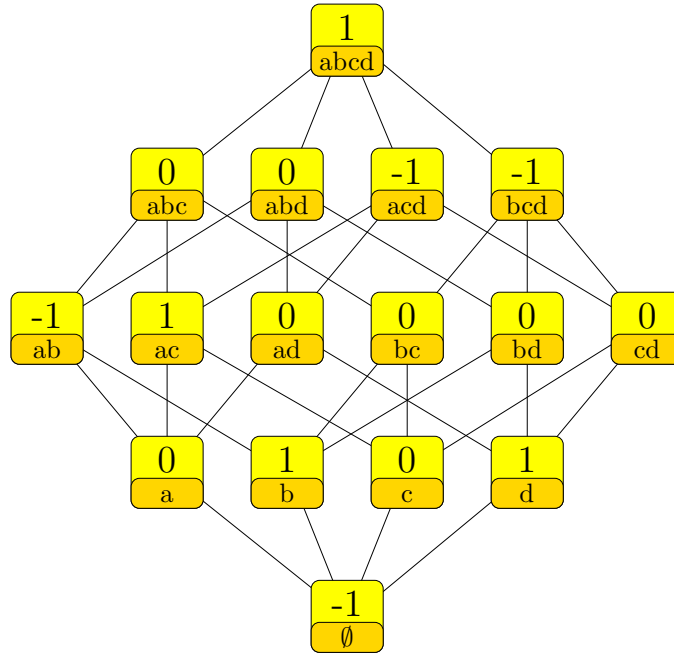


$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,d|b \rangle} - u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$

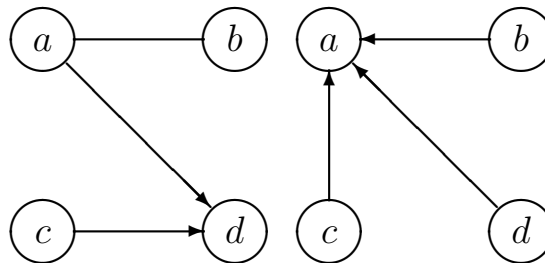




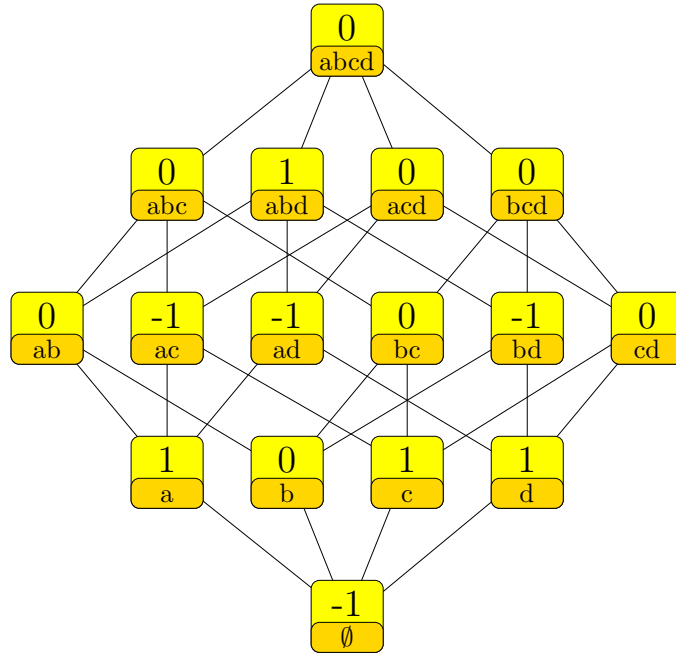
0.8.8.7 Differential inset (19)



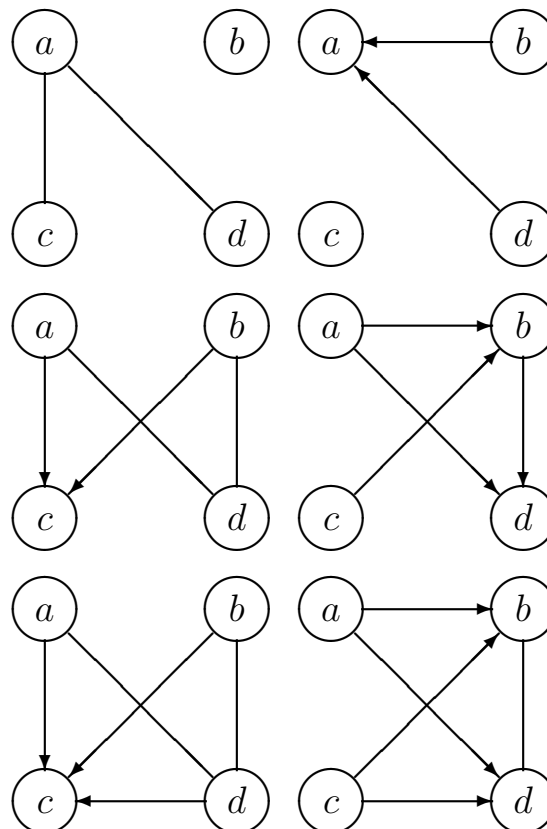
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



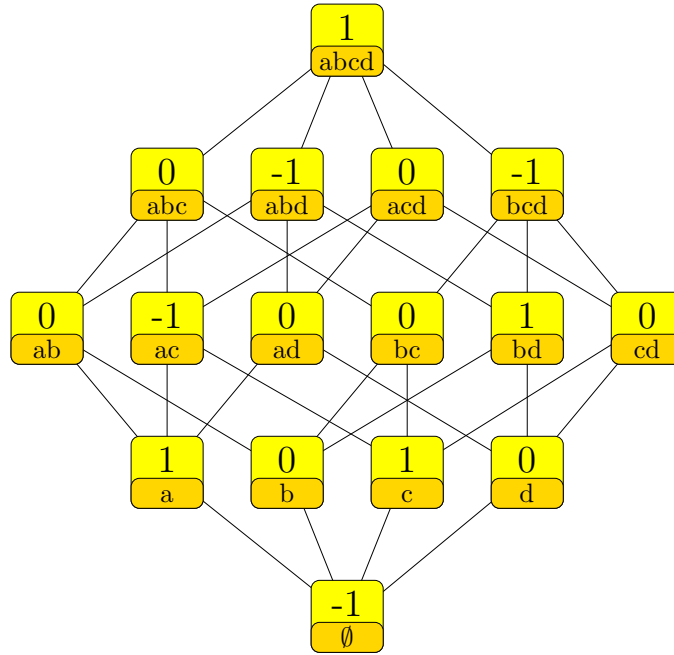
0.8.8.8 Differential inset (20)



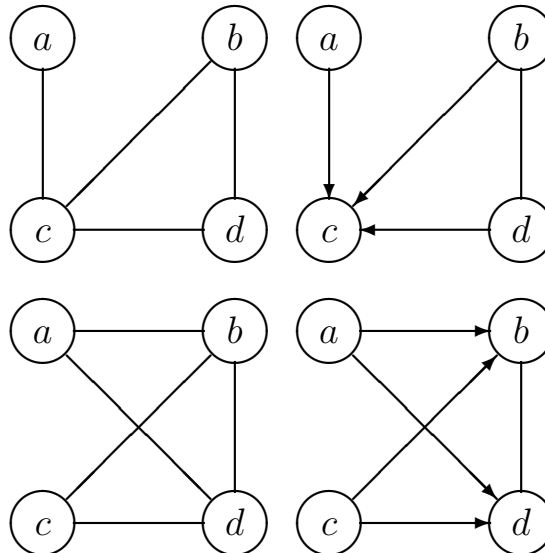
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}})
 \end{aligned}$$



0.8.8.9 Differential inset (21)

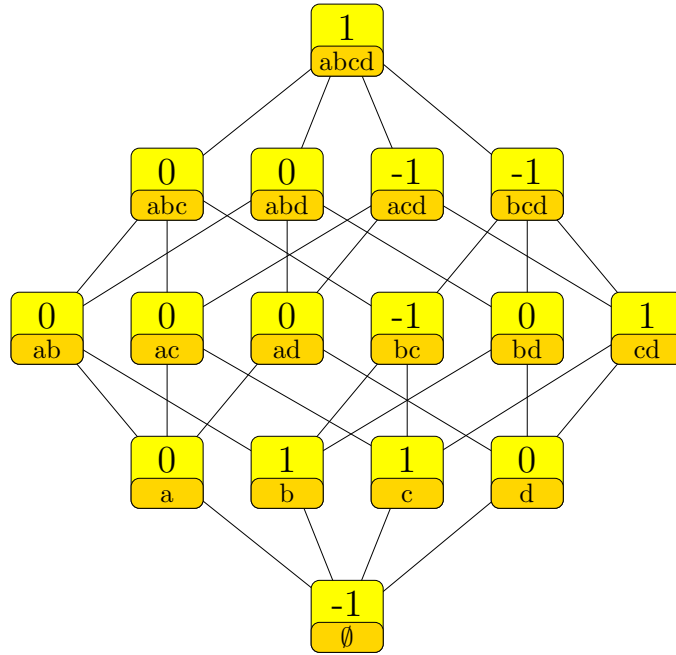


$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset} + u_{\langle a,c|bd} \\
 &= (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}})
 \end{aligned}$$

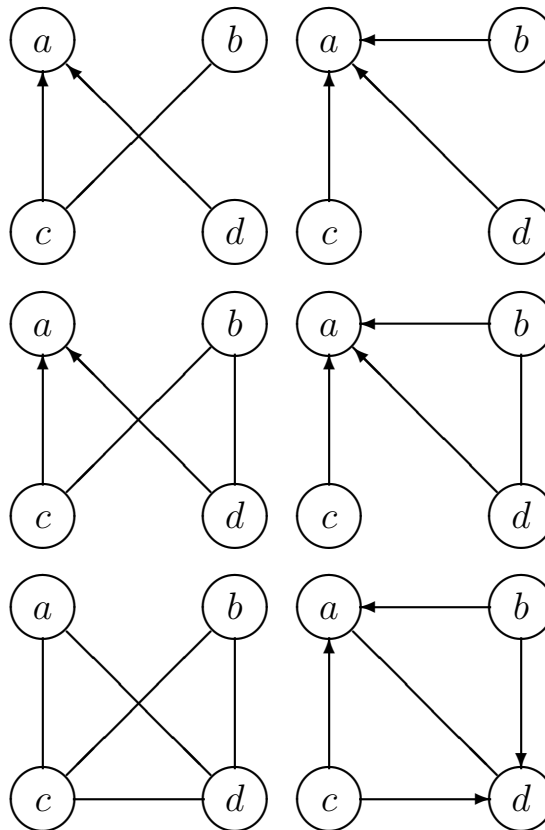




0.8.8.10 Differential imset (22)



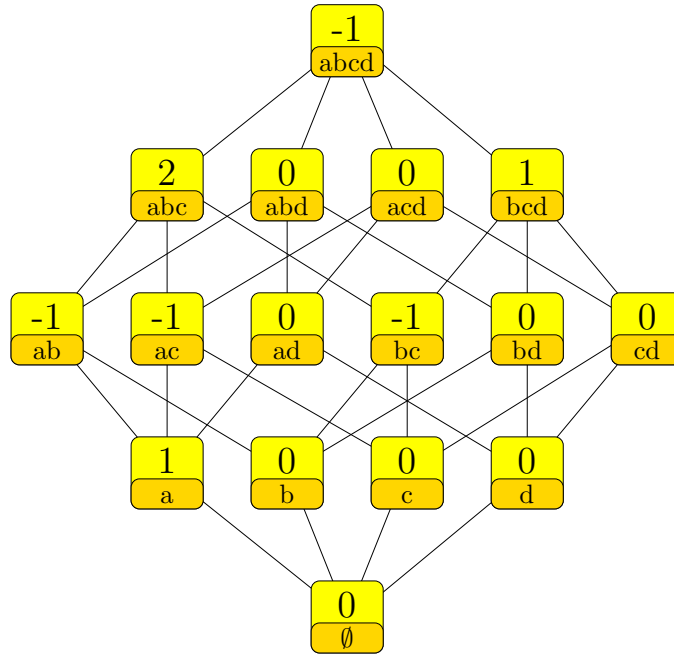
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}})
 \end{aligned}$$



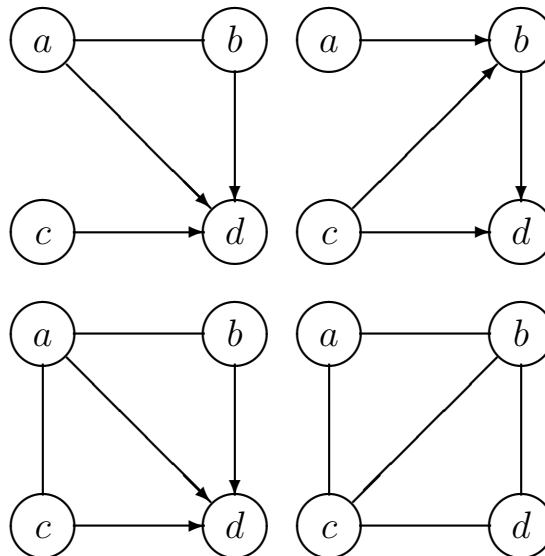
### 0.10 Squared Euclidean length 10

#### 0.10.7 Number of nonzero values 7

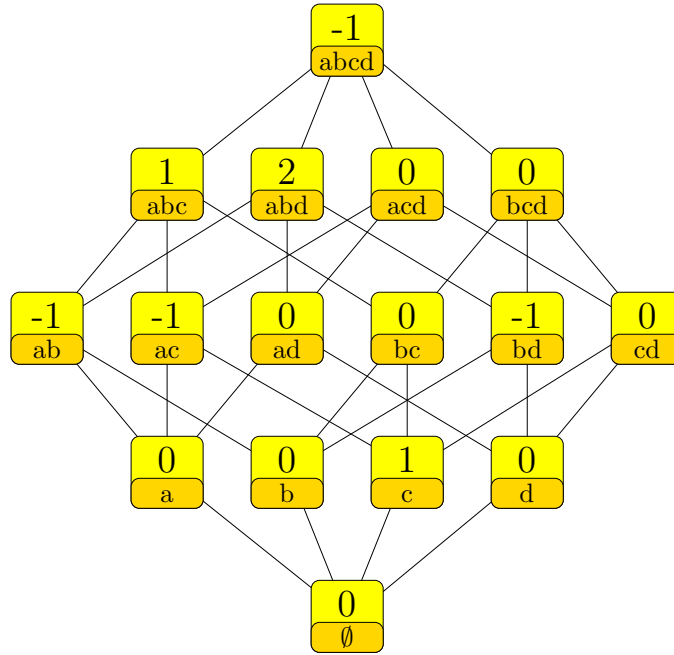
##### 0.10.7.1 Differential imset (23)



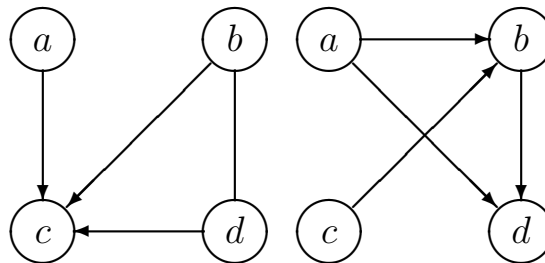
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + 2\delta_{\{a,b,c\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



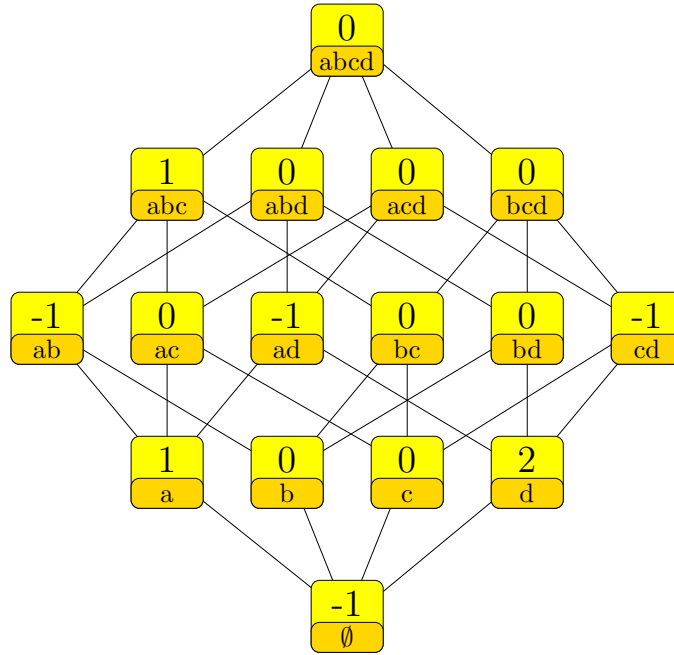
0.10.7.2 Differential imset (24)



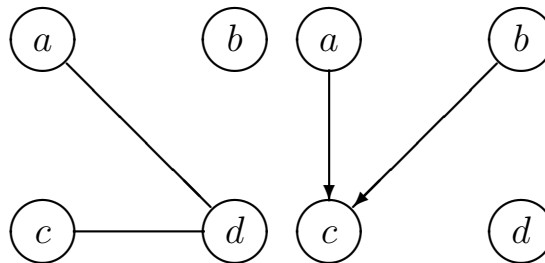
$$\begin{aligned}
 & \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + 2\delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



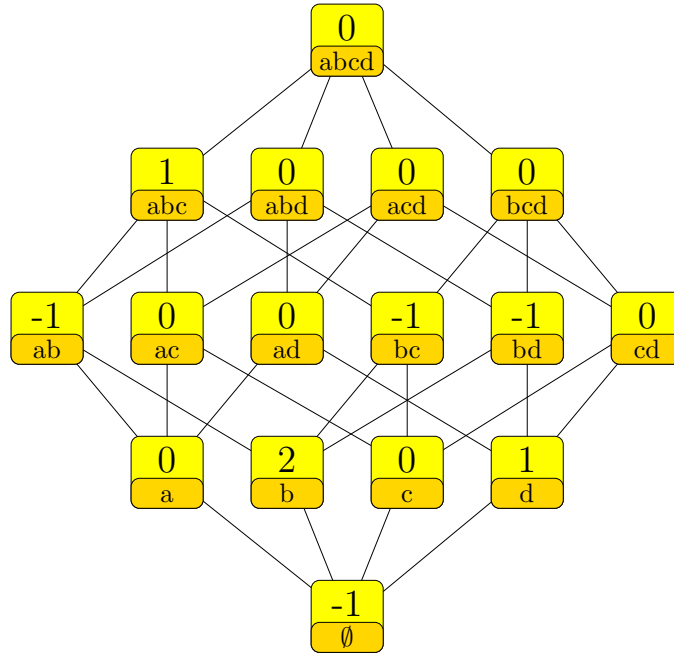
0.10.7.3 Differential imset (25)



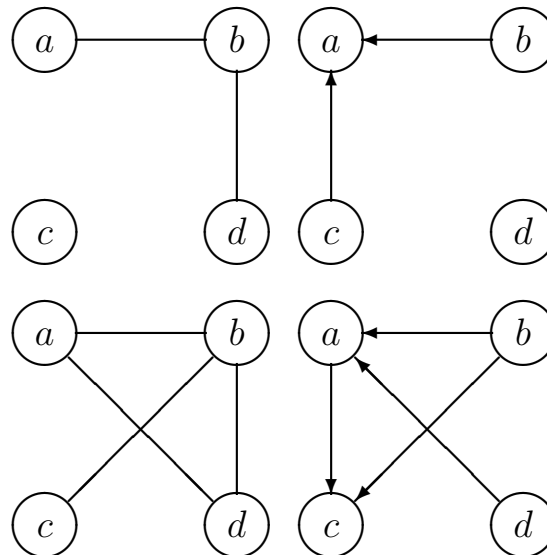
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



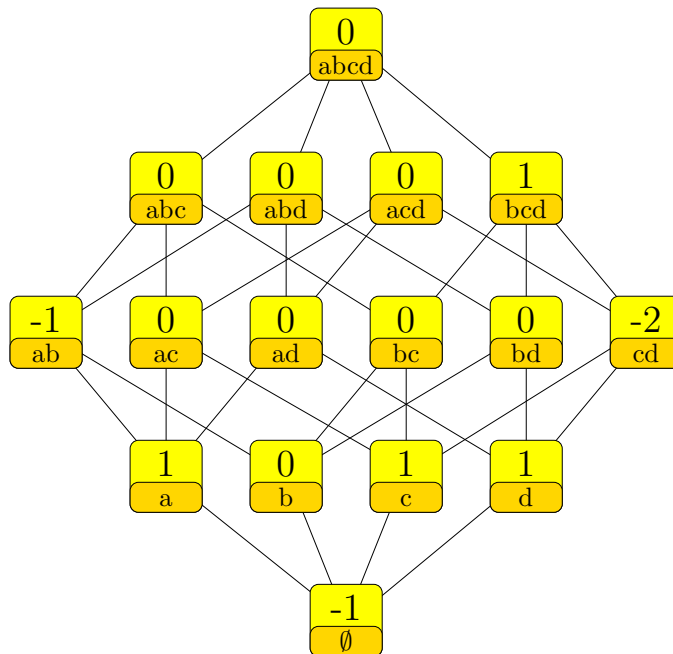
0.10.7.4 Differential imset (26)



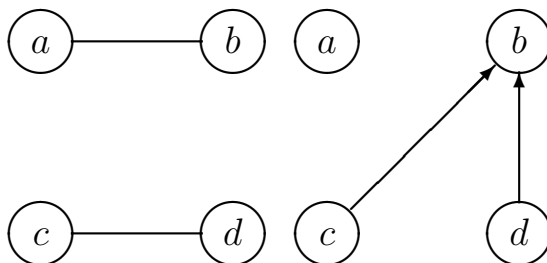
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle b,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_\emptyset + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



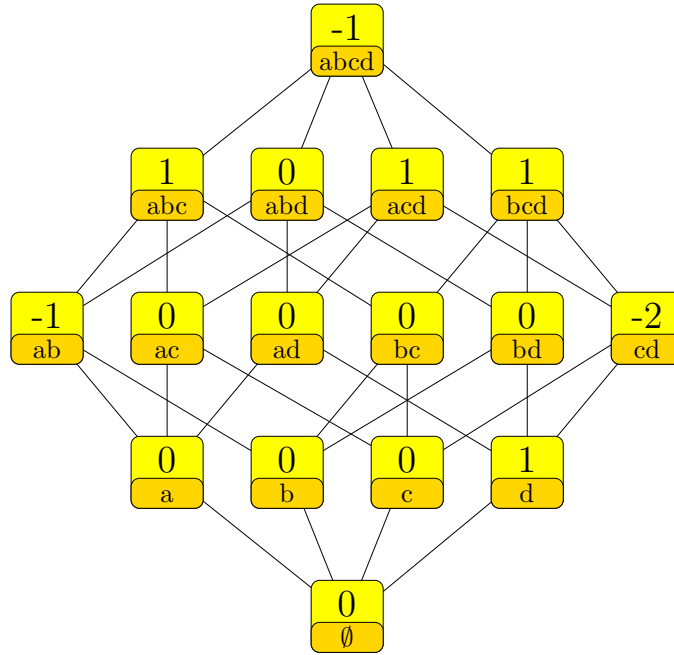
0.10.7.5 Differential imset (27)



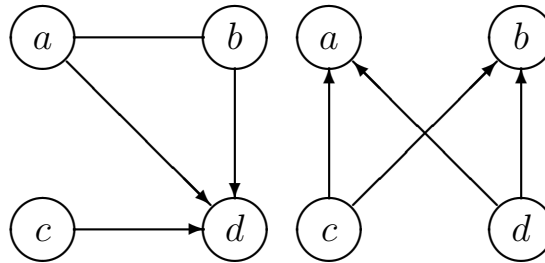
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{c,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



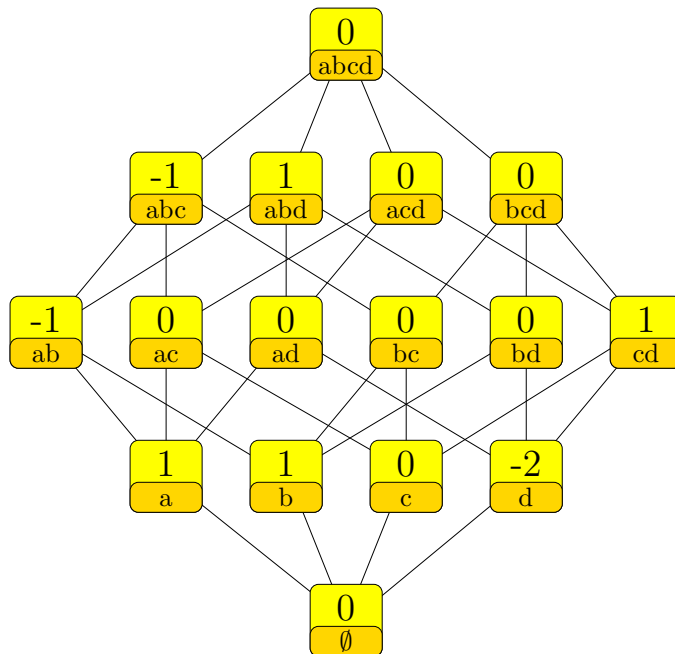
0.10.7.6 Differential imset (28)



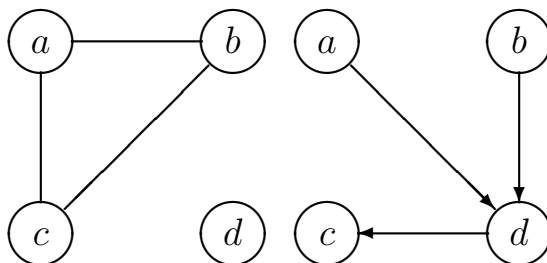
$$\begin{aligned}
 & \delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset} - u_{\langle c,d|\emptyset} - u_{\langle a,b|cd} + u_{\langle b,c|a} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.10.7.7 Differential imset (29)

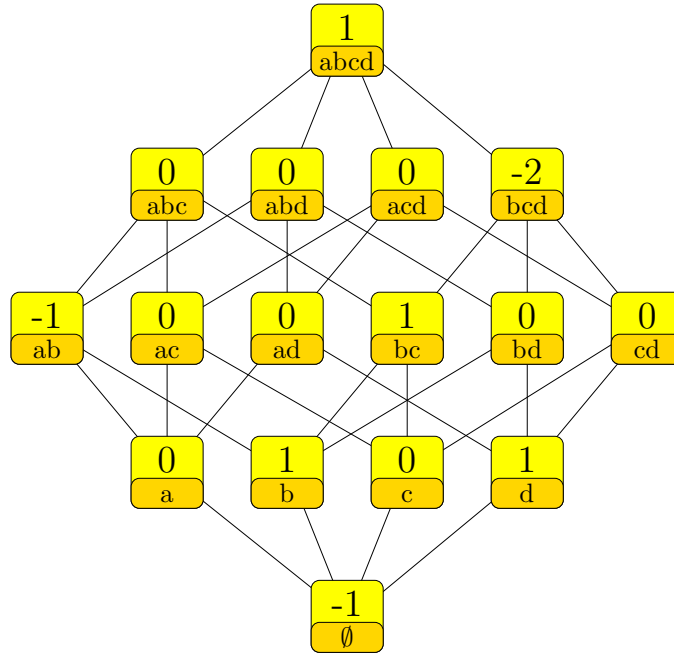


$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

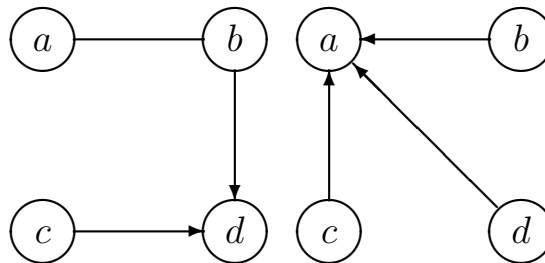




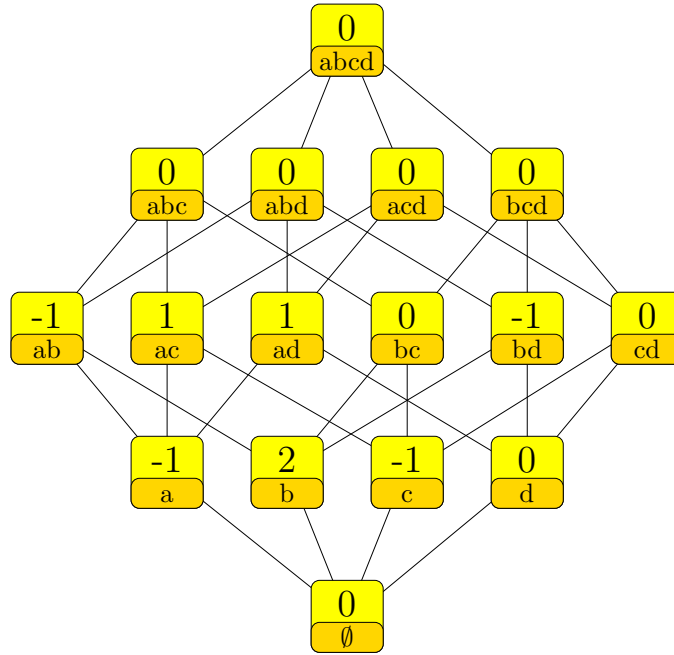
0.10.7.8 Differential imset (30)



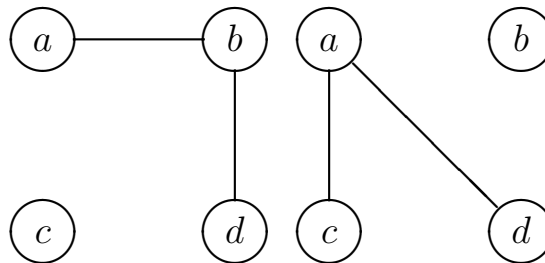
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



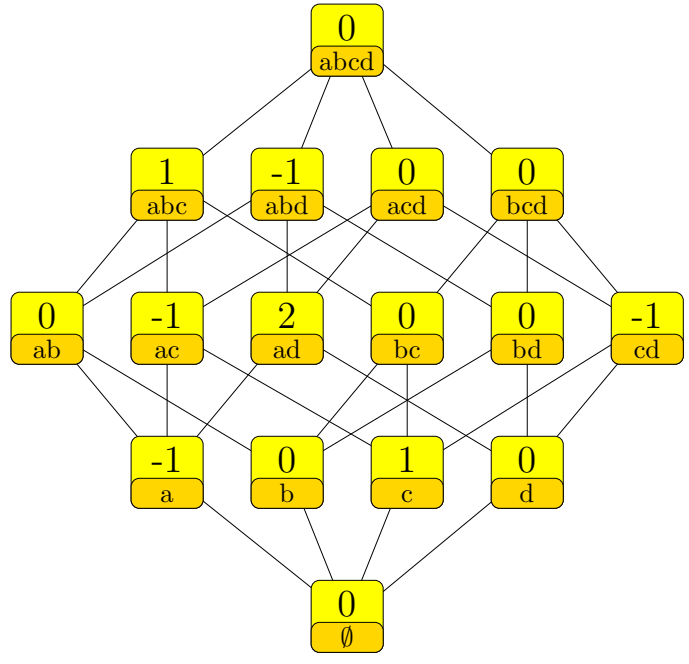
0.10.7.9 Differential imset (31)



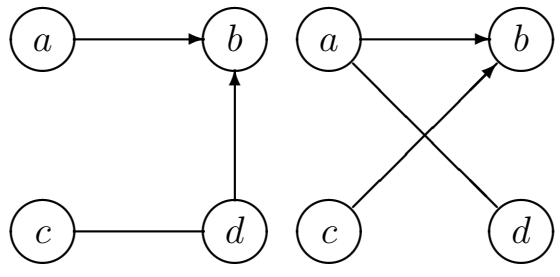
$$\begin{aligned}
 & -\delta_{\{a\}} + 2\delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|a \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



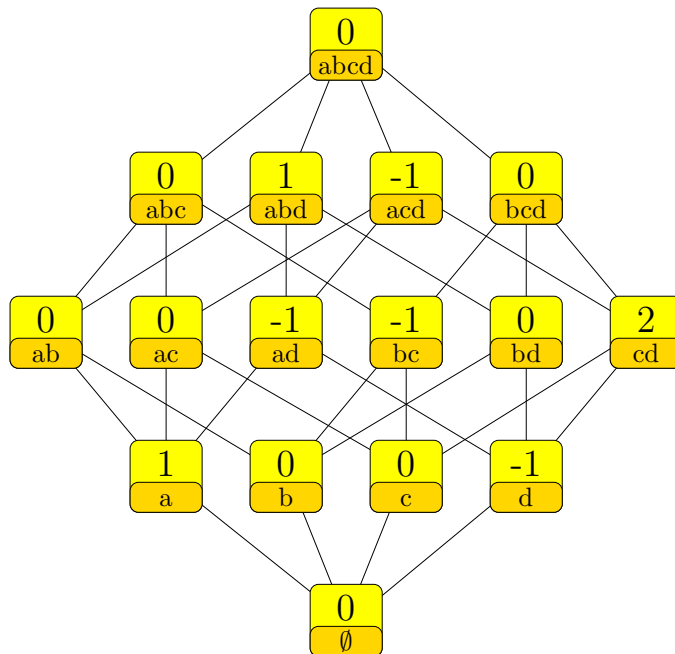
0.10.7.10 Differential imset (32)



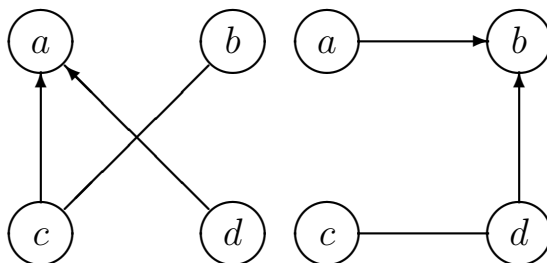
$$\begin{aligned}
 & -\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} + 2\delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle b,c|ad \rangle} - u_{\langle b,d|a \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



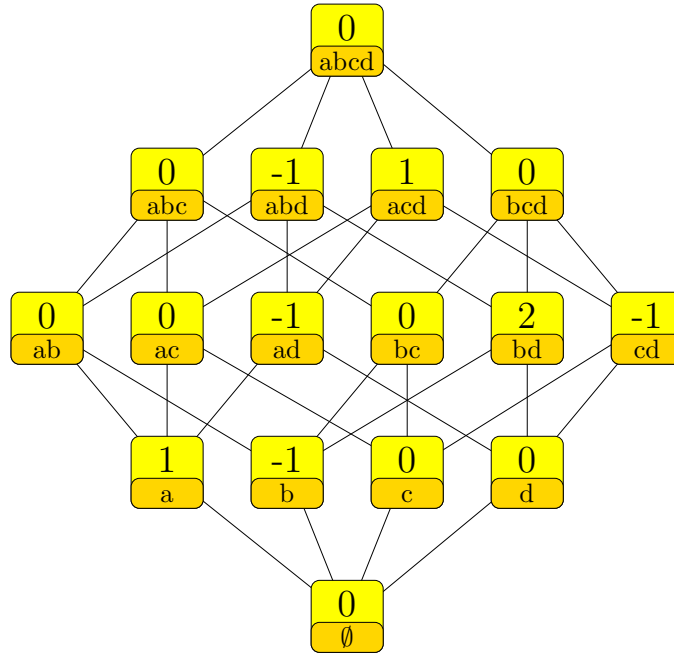
0.10.7.11 Differential imset (33)



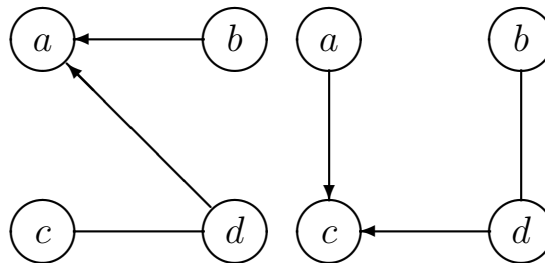
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + 2\delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle a,b|cd \rangle} - u_{\langle a,d|c \rangle} + u_{\langle c,d|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



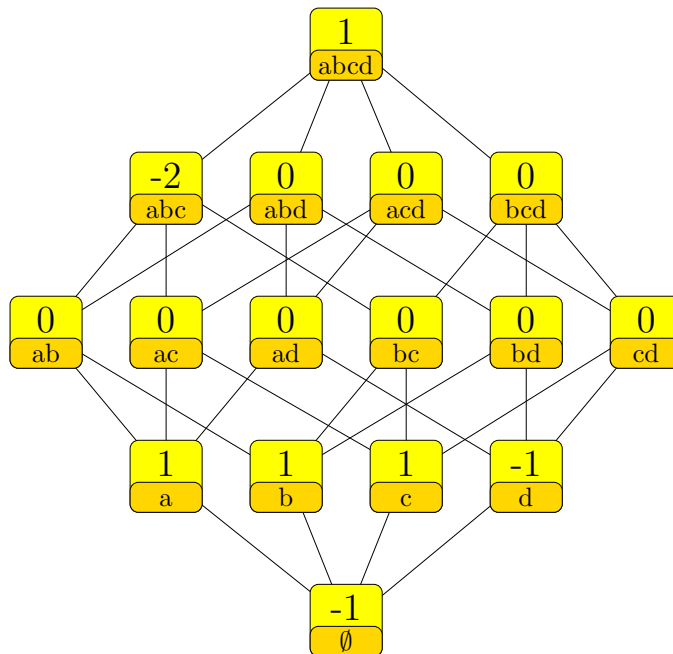
0.10.7.12 Differential imset (34)



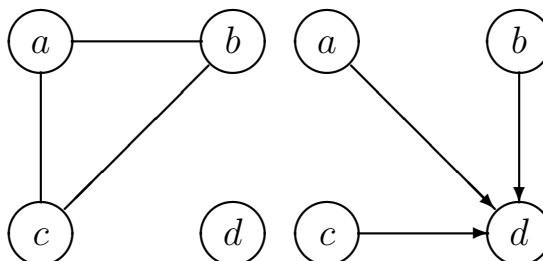
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,d\}} + 2\delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle a,d|b \rangle} + u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



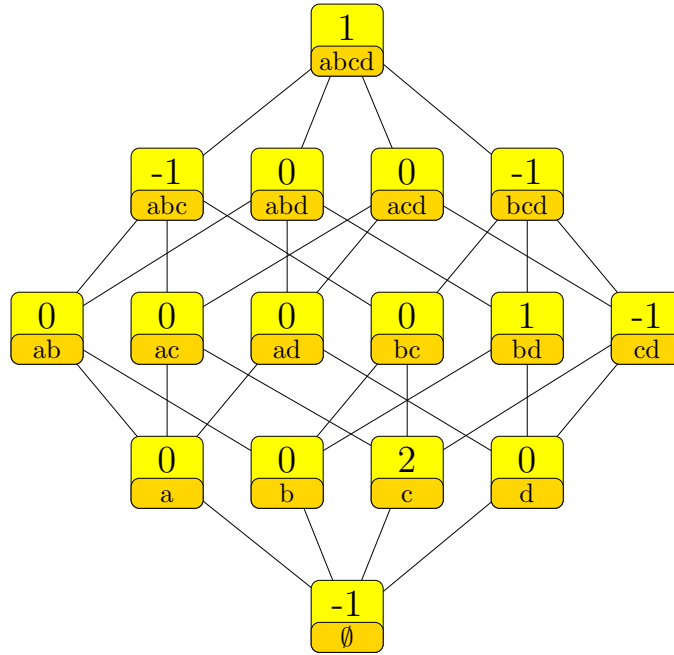
0.10.7.13 Differential imset (35)



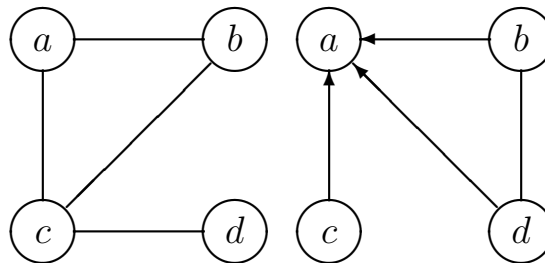
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



0.10.7.14 Differential imset (36)

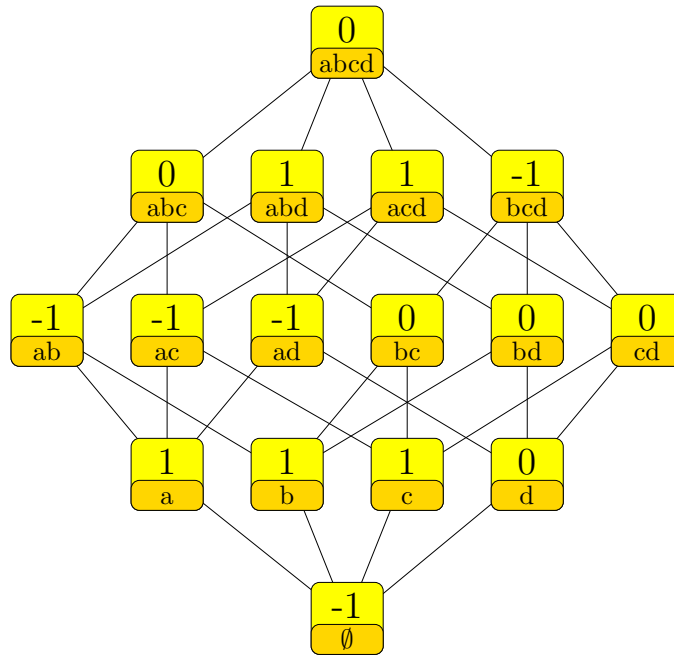


$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle a,d|c \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_{\{c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$

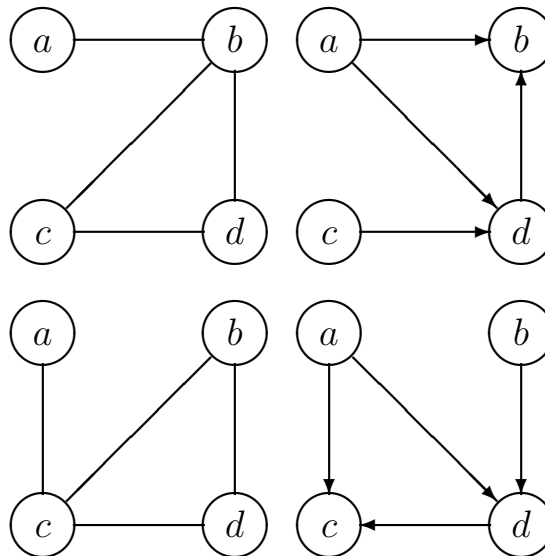


0.10.10 Number of nonzero values 10

0.10.10.1 Differential imset (37)

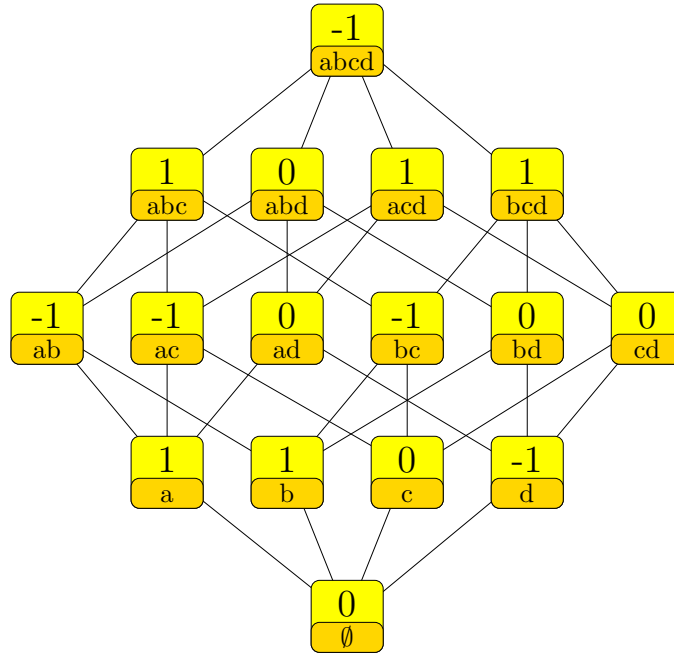


$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

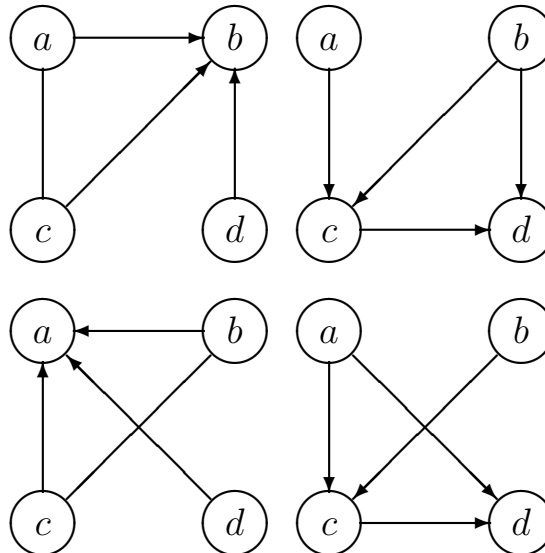




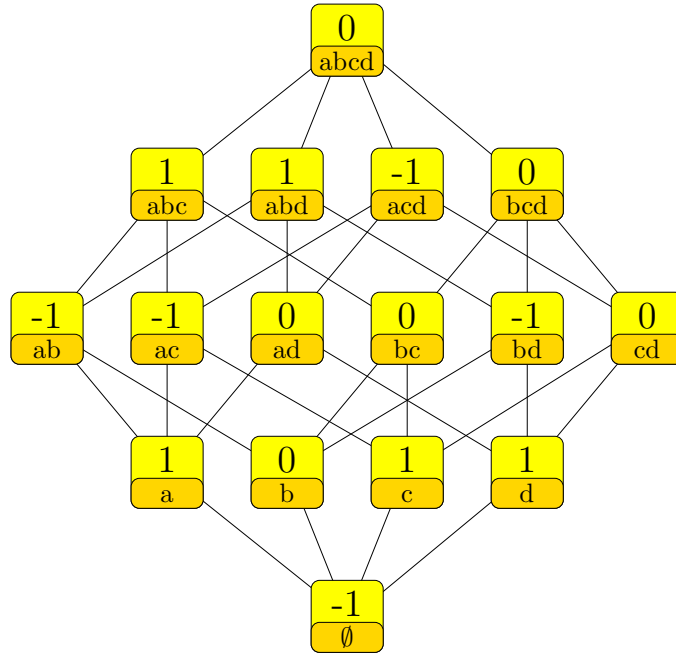
0.10.10.2 Differential imset (38)



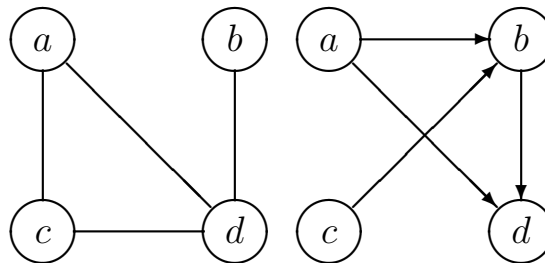
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle a,d|bc \rangle} + u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



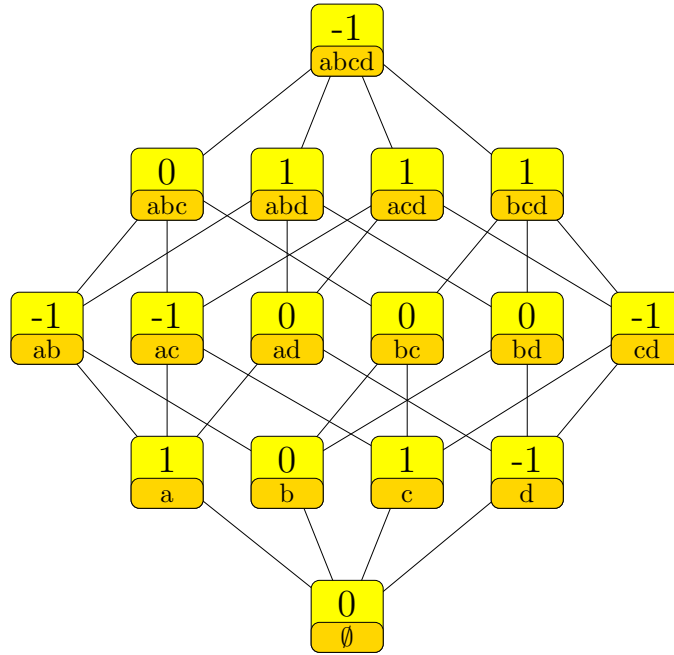
0.10.10.3 Differential imset (39)



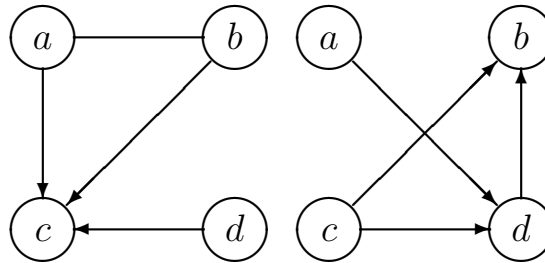
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 & = -u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,b|d \rangle} \\
 & = (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



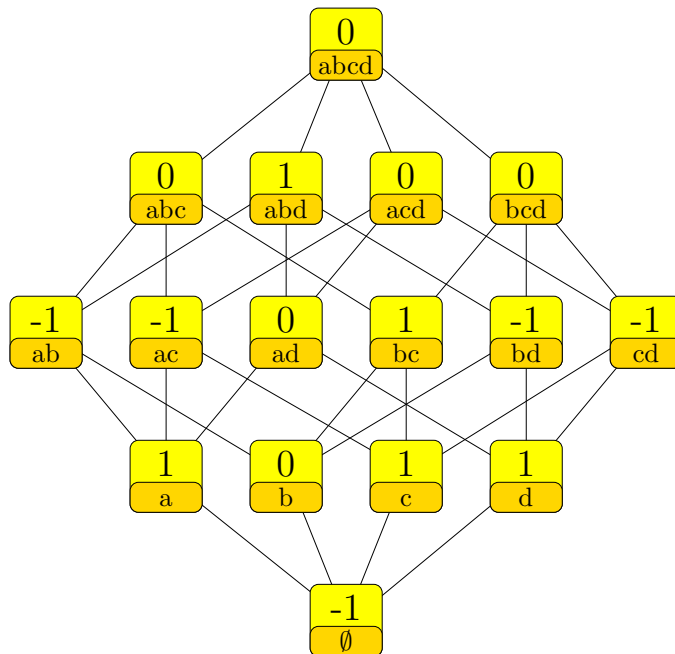
0.10.10.4 Differential imset (40)



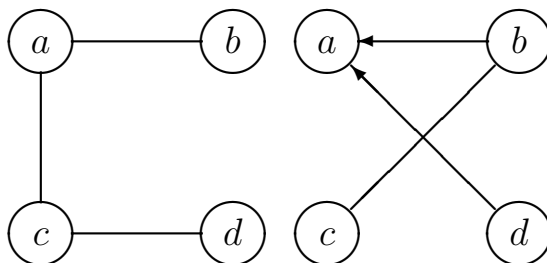
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle a,b|cd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



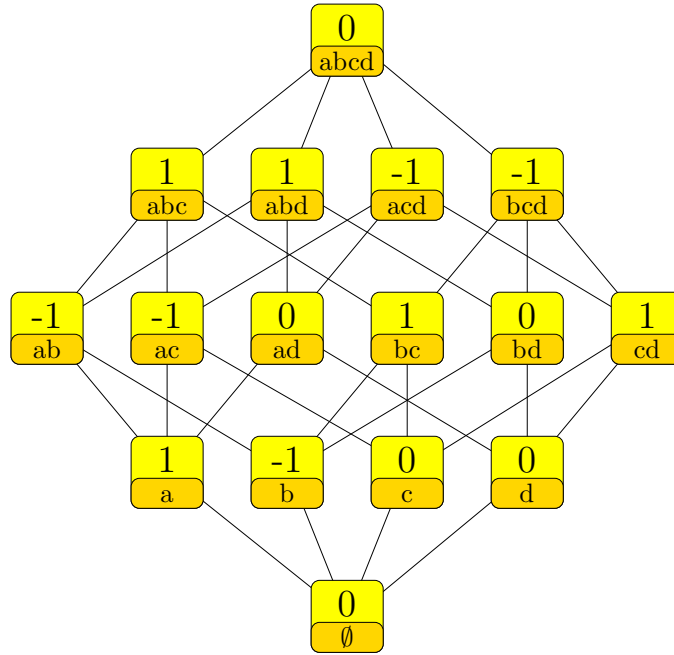
0.10.10.5 Differential imset (41)



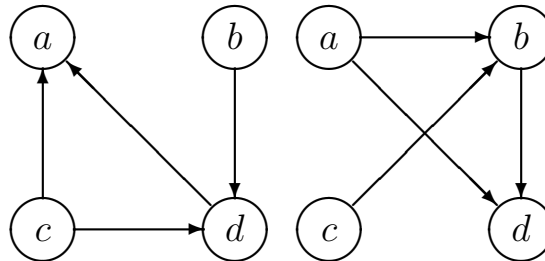
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 & = -u_{\langle a,c|\emptyset} + u_{\langle b,c|\emptyset} - u_{\langle c,d|\emptyset} + u_{\langle a,d|b} \\
 & = (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



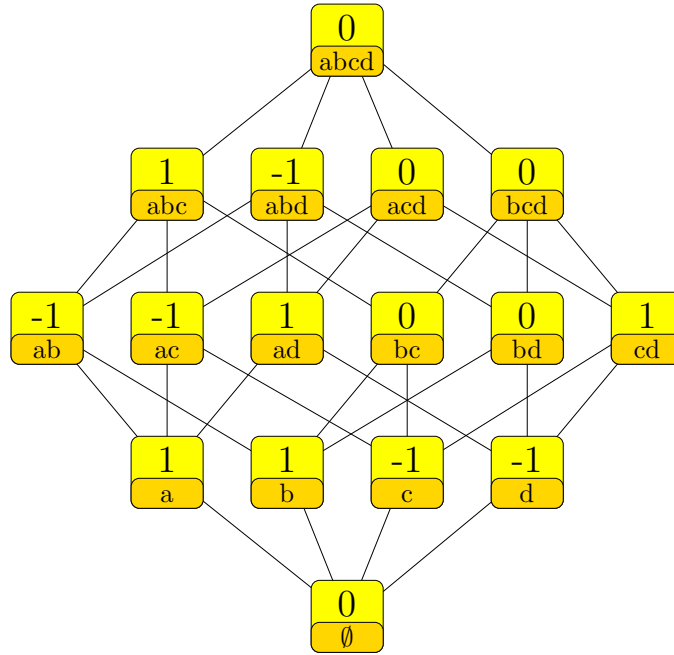
0.10.10.6 Differential imset (42)



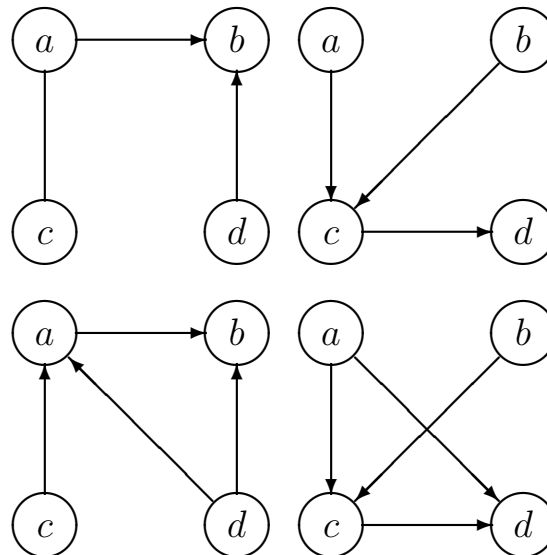
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



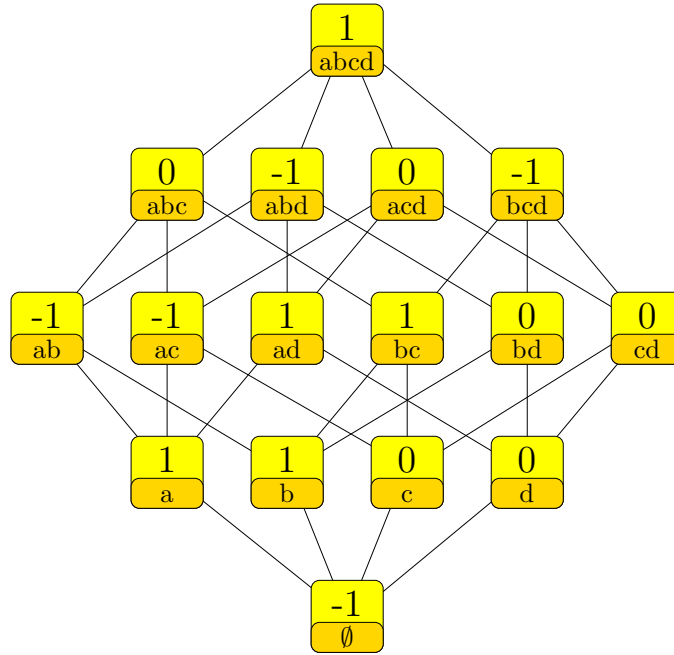
0.10.10.7 Differential imset (43)



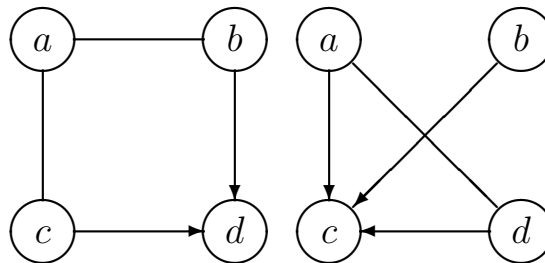
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|ad \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



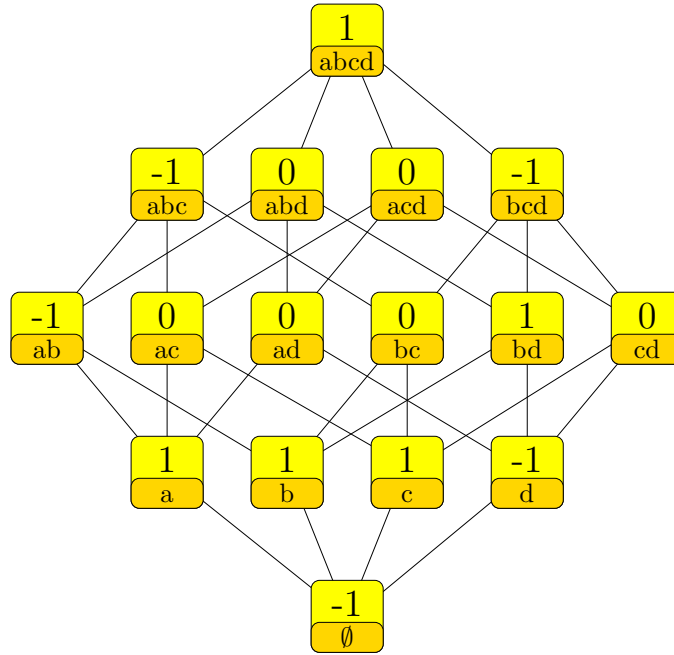
0.10.10.8 Differential imset (44)



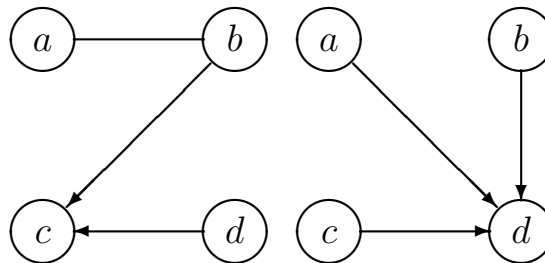
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|a \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



0.10.10.9 Differential imset (45)



$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$

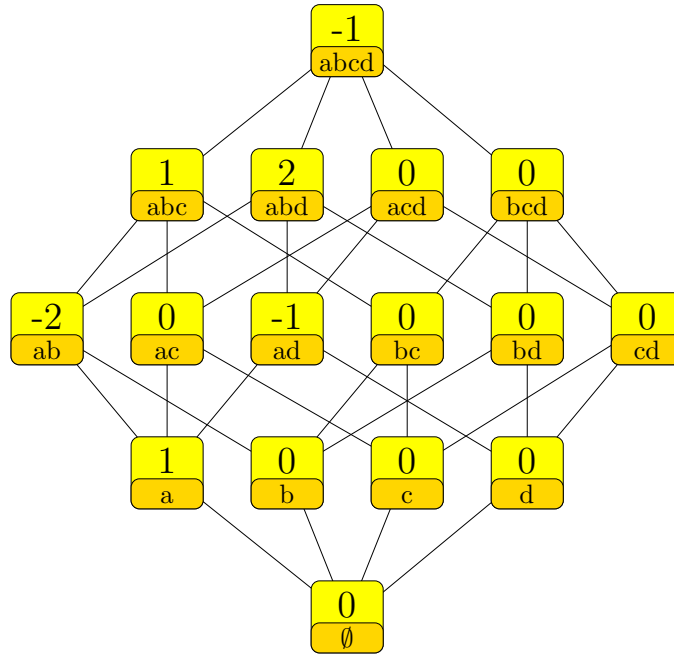




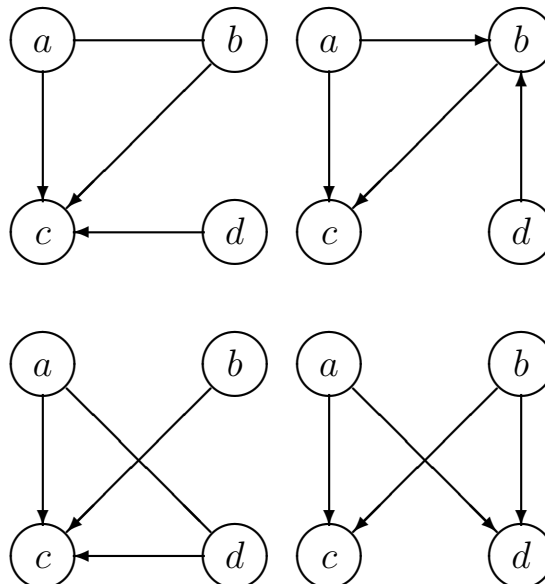
## 0.12 Squared Euclidean length 12

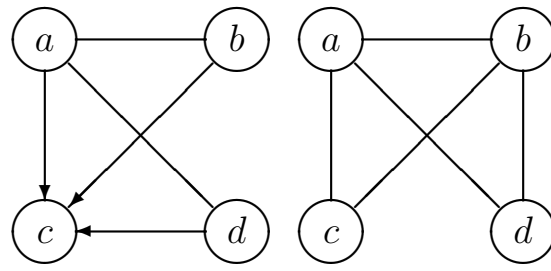
### 0.12.6 Number of nonzero values 6

#### 0.12.6.1 Differential imset (46)

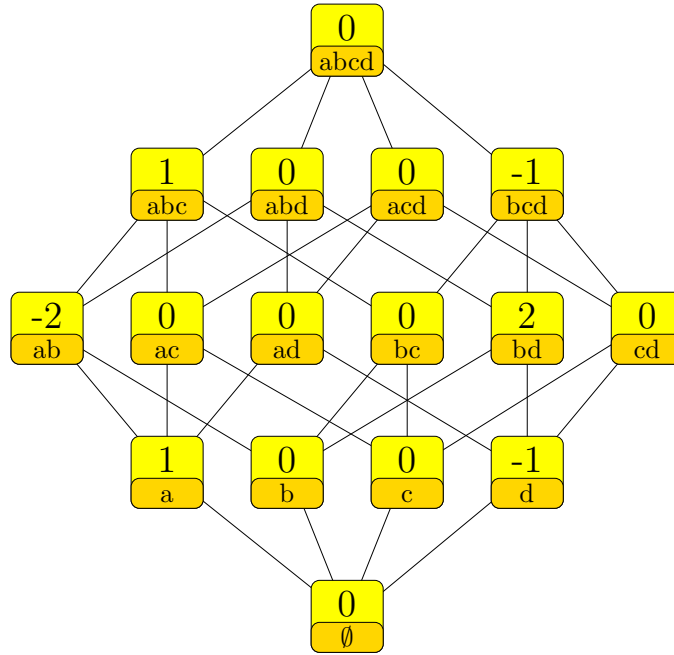


$$\begin{aligned}
 & \delta_{\{a\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c\}} + 2\delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

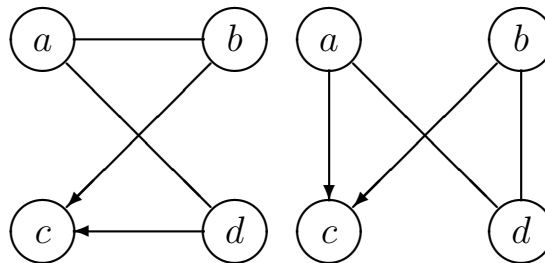




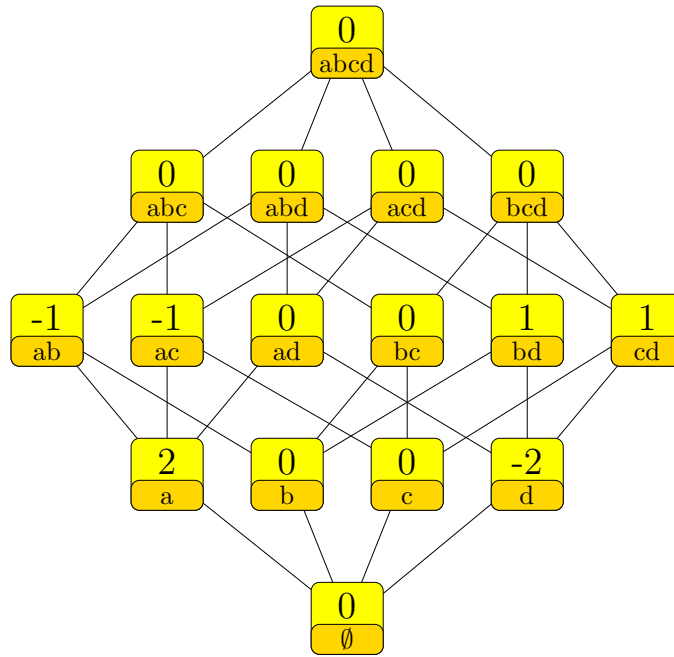
0.12.6.2 Differential imset (47)



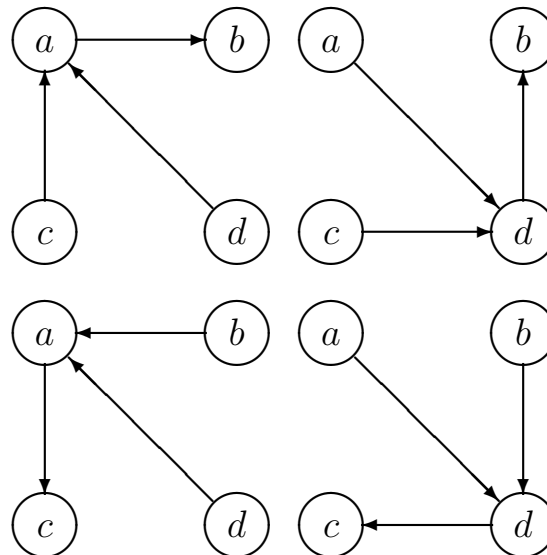
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + 2\delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



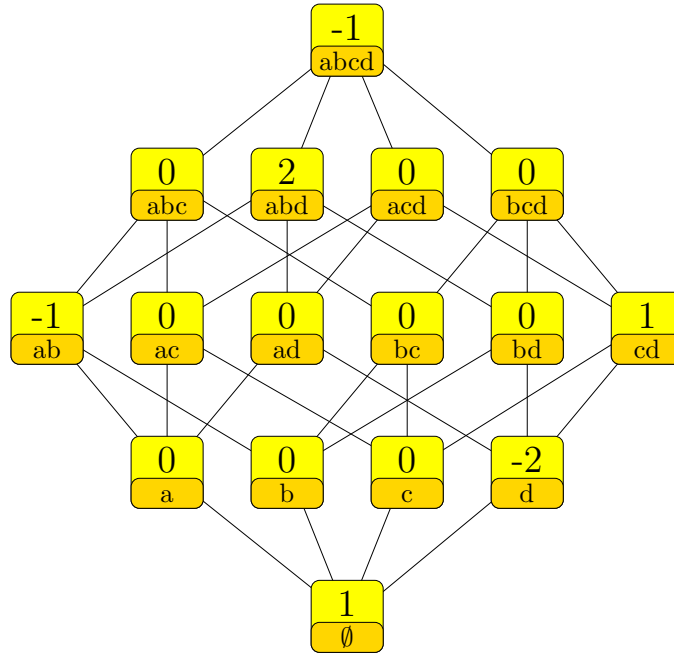
0.12.6.3 Differential imset (48)



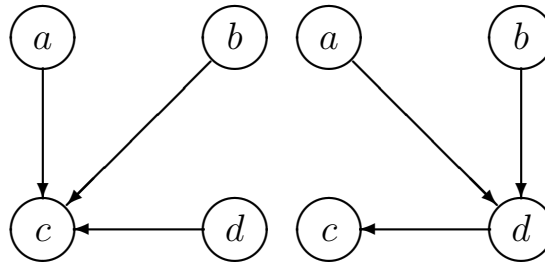
$$\begin{aligned}
 &+2\delta_{\{a\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



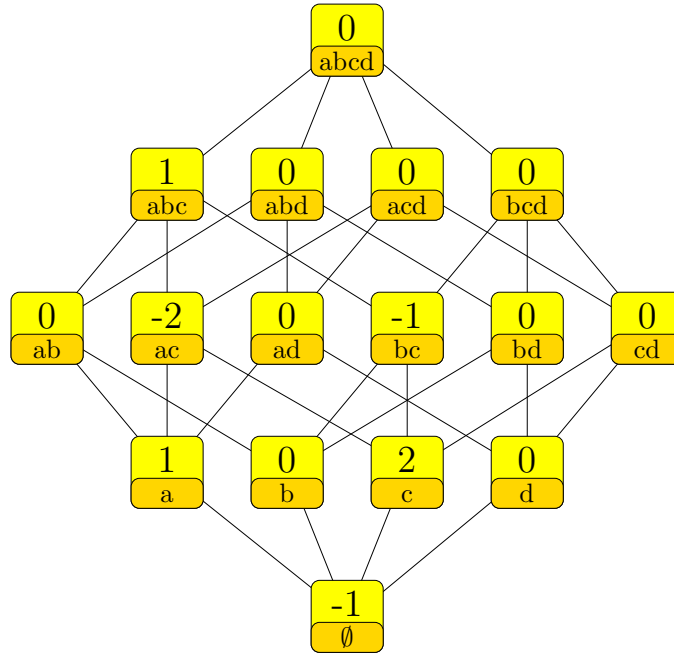
0.12.6.4 Differential imset (49)



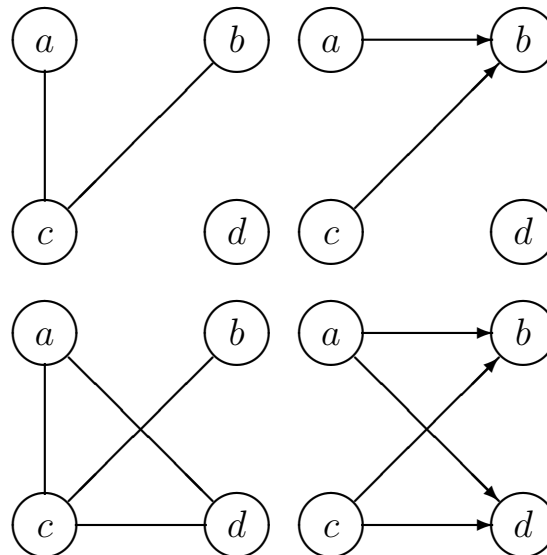
$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} + 2\delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.12.6.5 Differential imset (50)

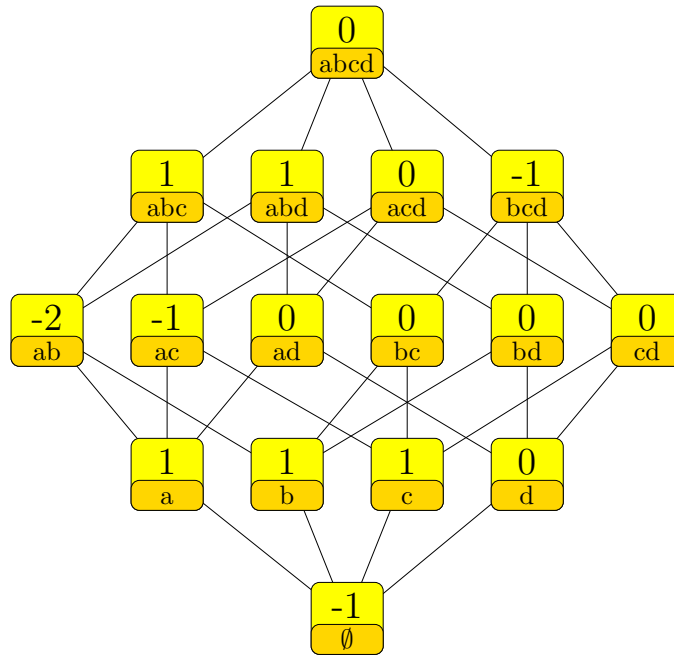


$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + 2\delta_{\{c\}} - 2\delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,b|c \rangle} \\
 &= (\delta_\emptyset + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + 2\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

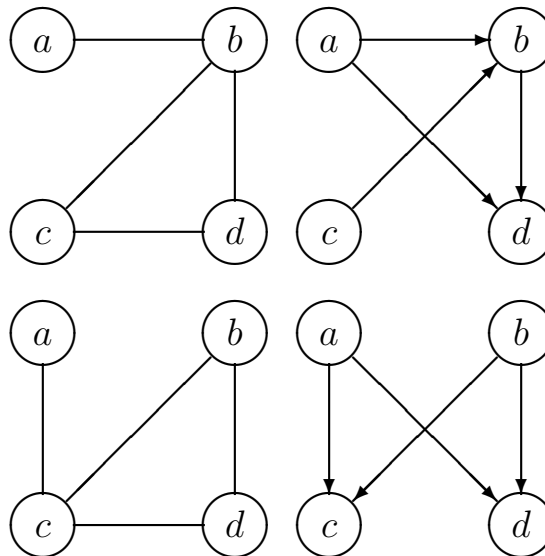


0.12.9 Number of nonzero values 9

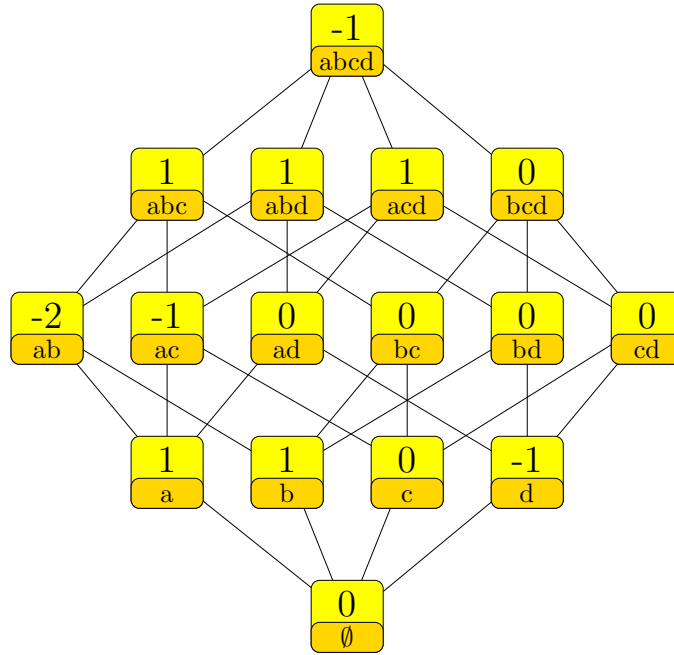
0.12.9.1 Differential imset (51)



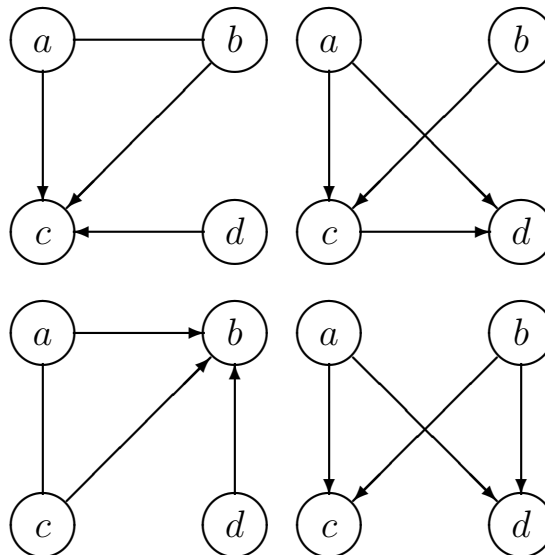
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.12.9.2 Differential imset (52)

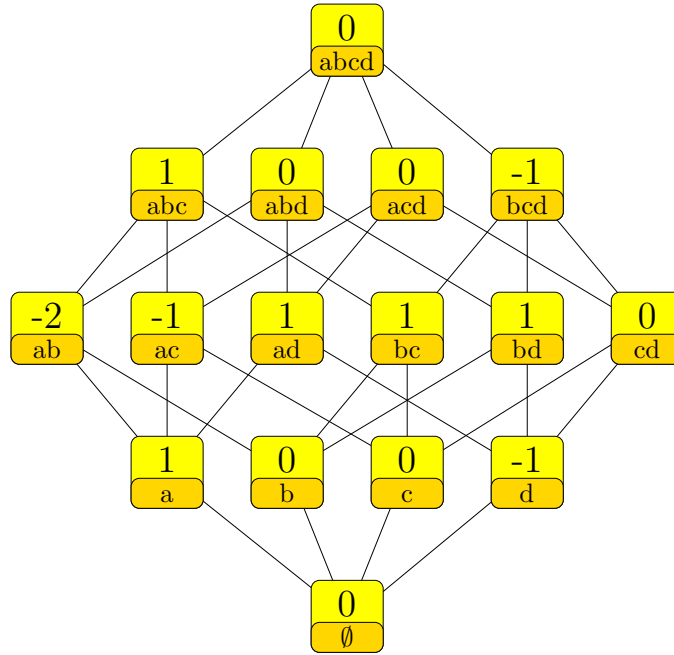


$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

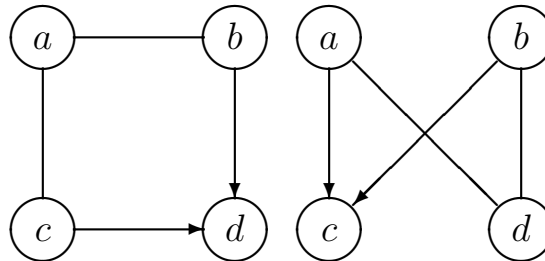




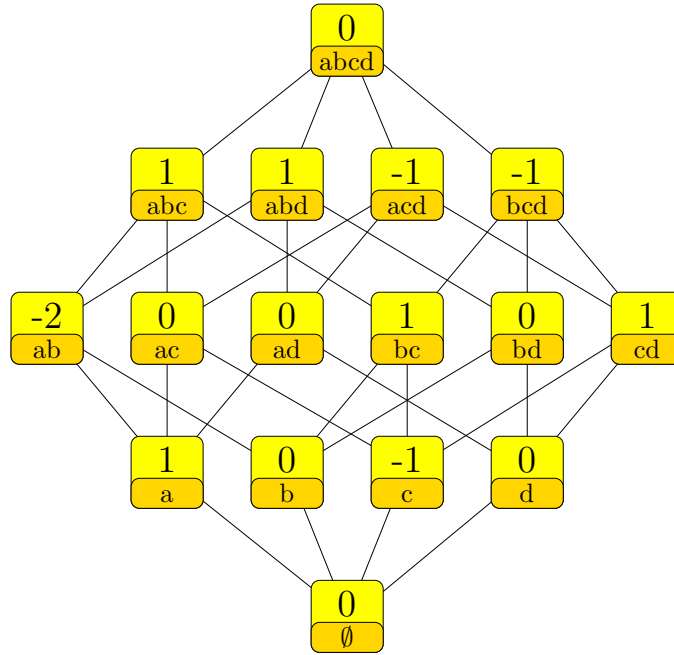
0.12.9.3 Differential imset (53)



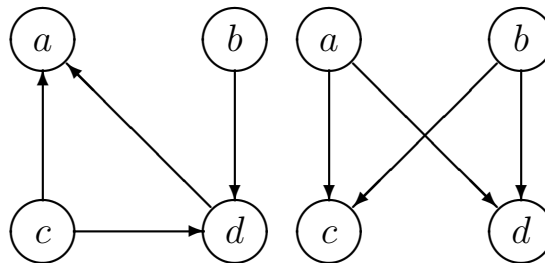
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



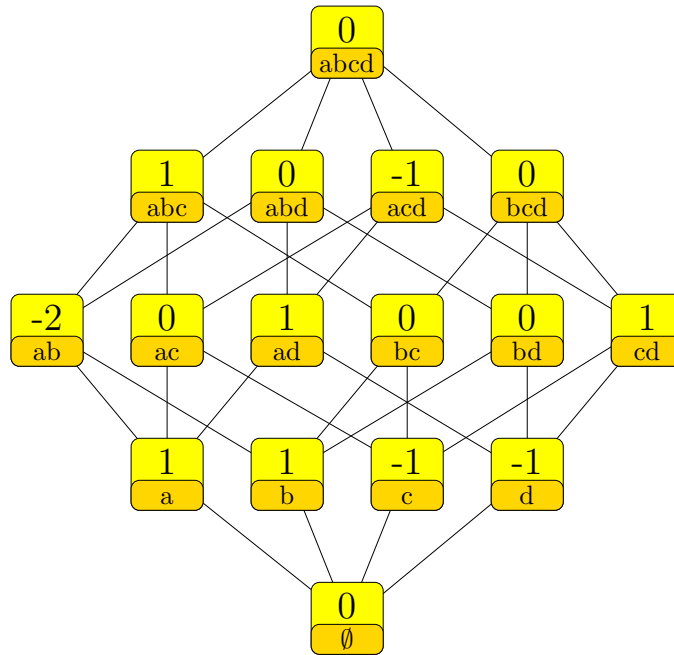
0.12.9.4 Differential imset (54)



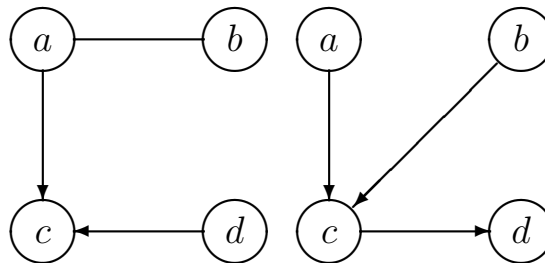
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{c\}} - 2\delta_{\{a,b\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



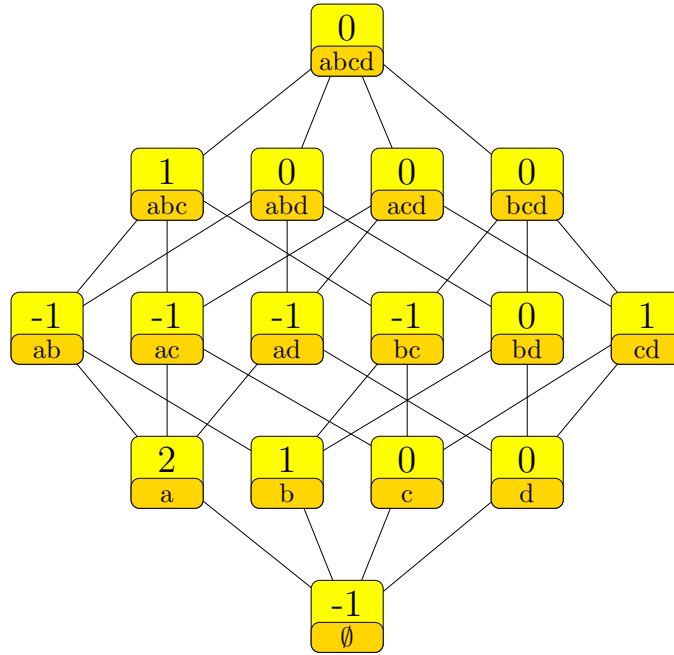
0.12.9.5 Differential imset (55)



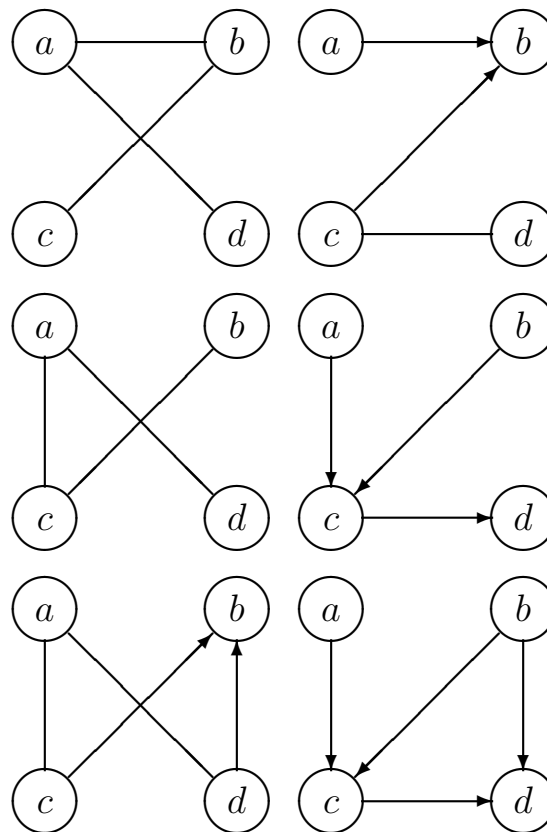
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



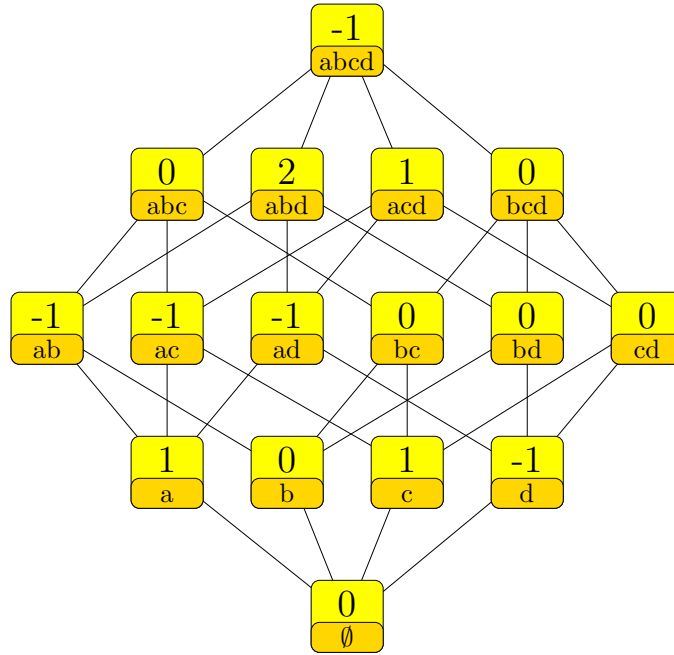
0.12.9.6 Differential imset (56)



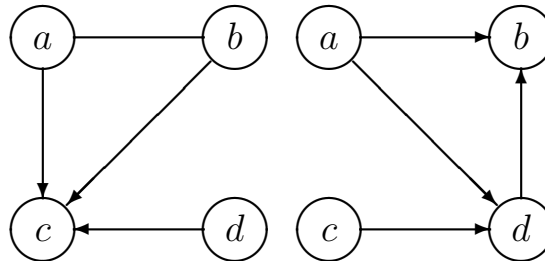
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



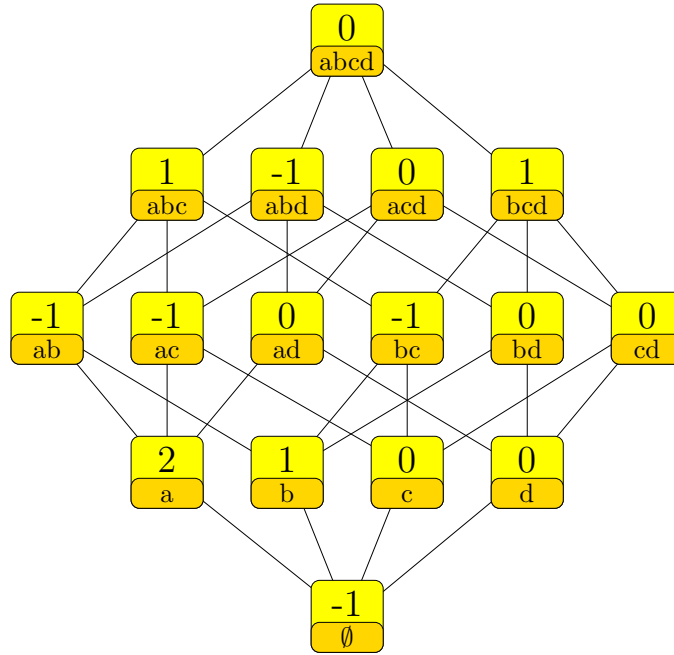
0.12.9.7 Differential imset (57)



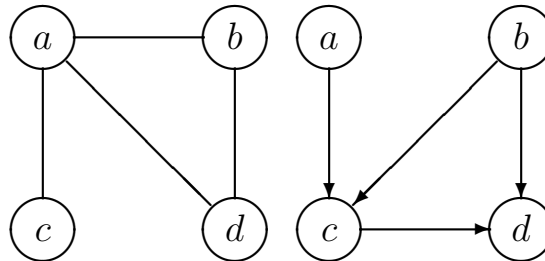
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + 2\delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



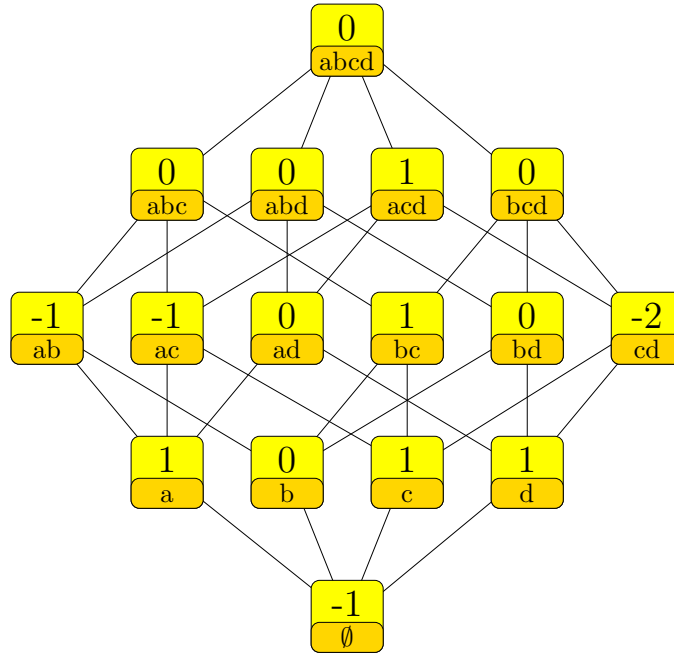
0.12.9.8 Differential imset (58)



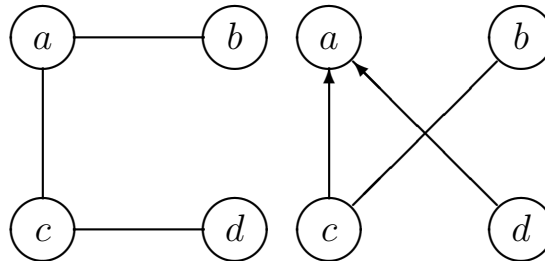
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 & = -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 & = (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



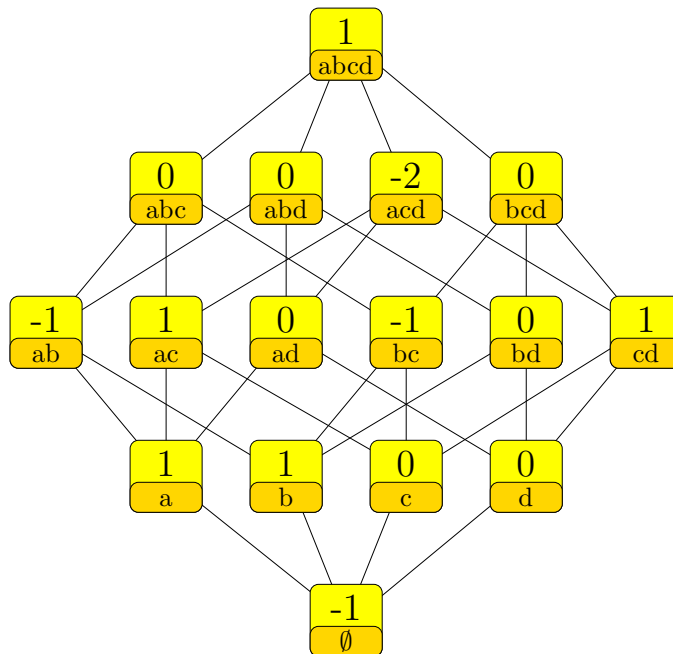
0.12.9.9 Differential imset (59)



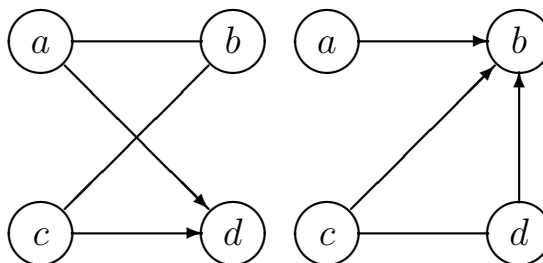
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - 2\delta_{\{c,d\}} + \delta_{\{a,c,d\}} \\
 & = -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle a,d|c \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.12.9.10 Differential imset (60)

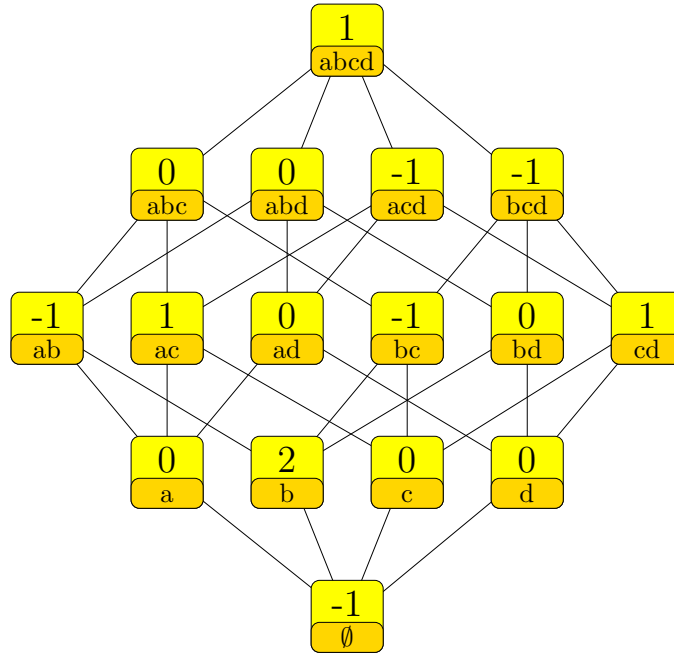


$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle a,c|b \rangle} - u_{\langle a,d|c \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$

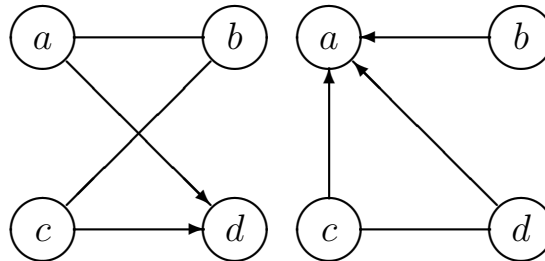




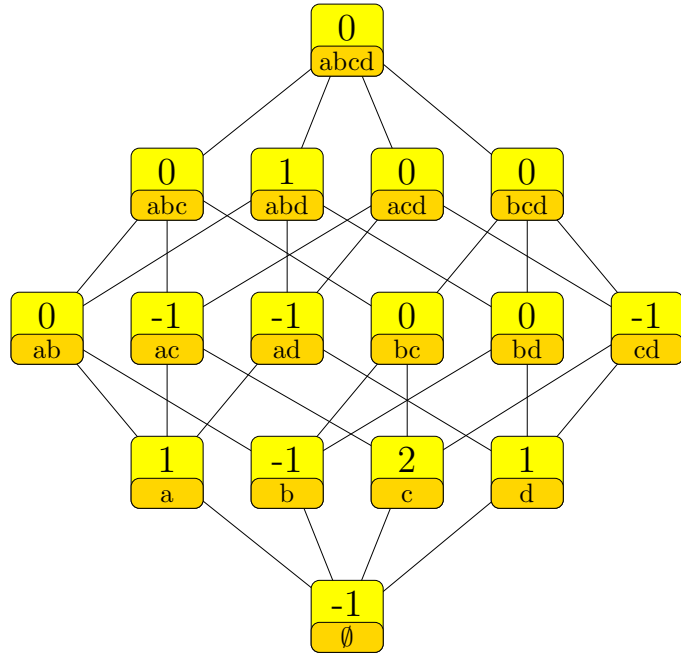
0.12.9.11 Differential imset (61)



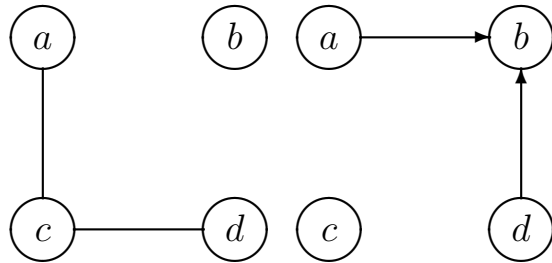
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle a,c|b \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



0.12.9.12 Differential imset (62)

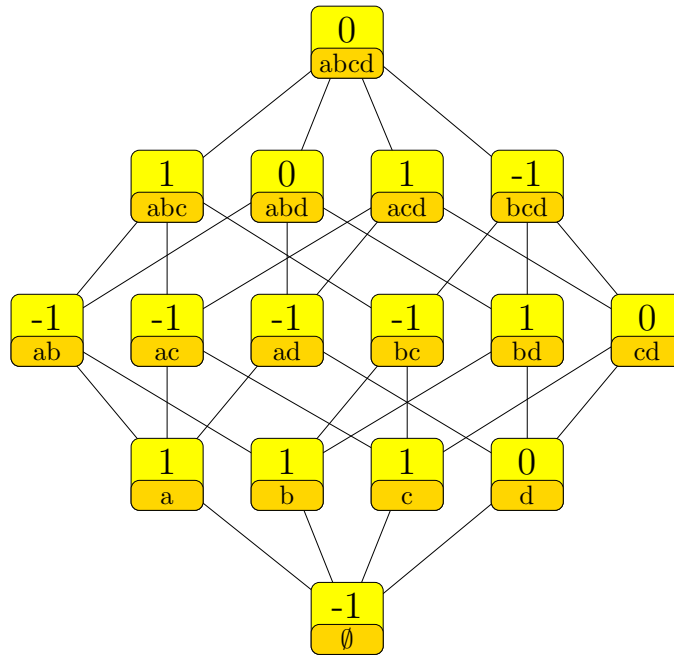


$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

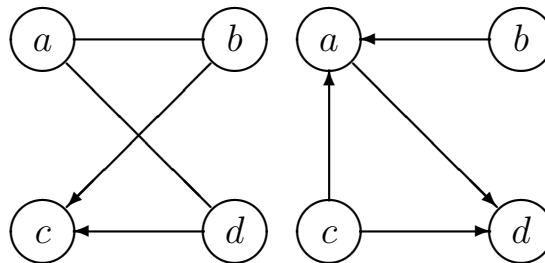


0.12.12 Number of nonzero values 12

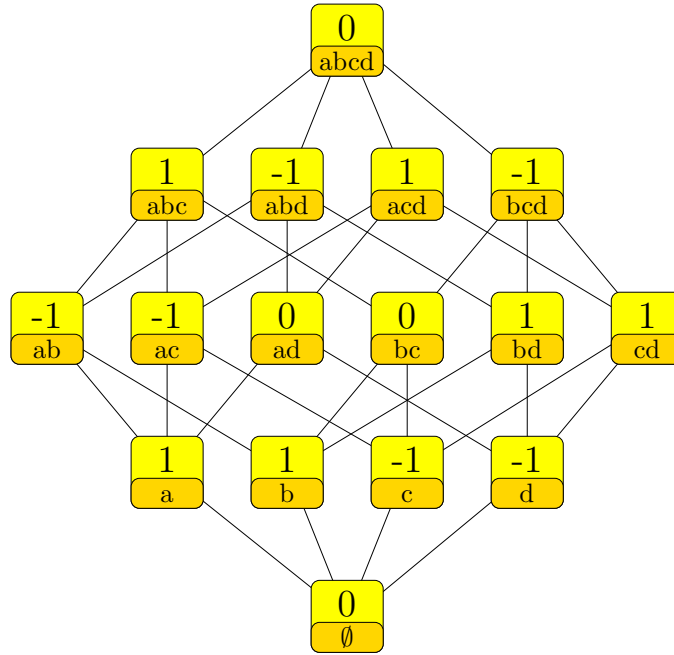
0.12.12.1 Differential imset (63)



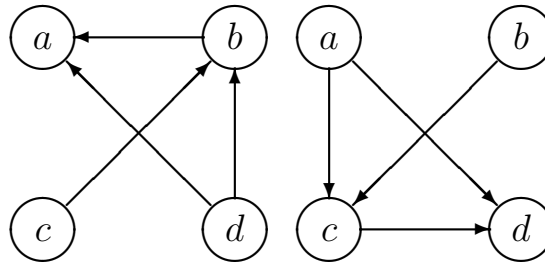
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 & = -u_{\langle b,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} \\
 & = (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.12.12.2 Differential imset (64)



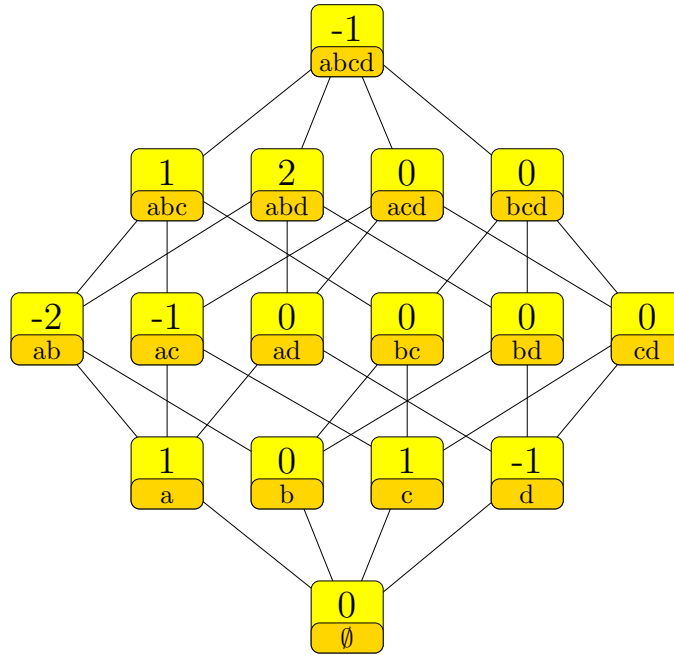
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



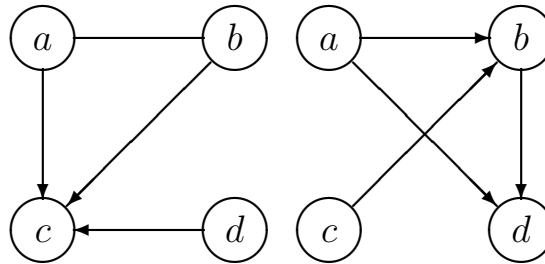
### 0.14 Squared Euclidean length 14

#### 0.14.8 Number of nonzero values 8

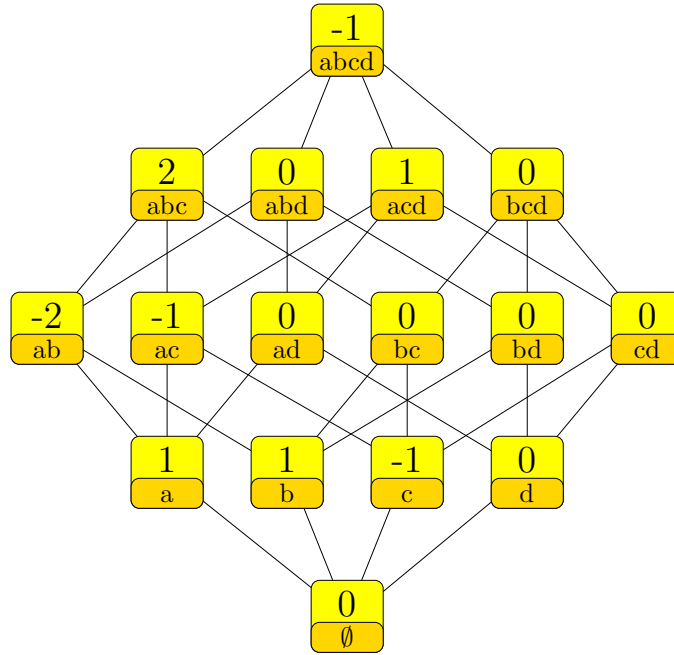
##### 0.14.8.1 Differential imset (65)



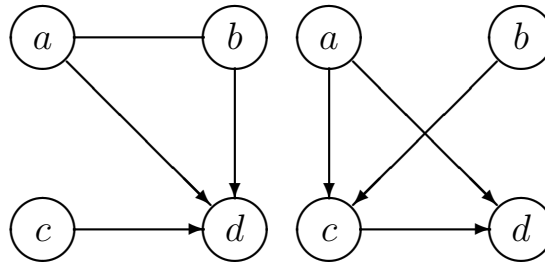
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} + 2\delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



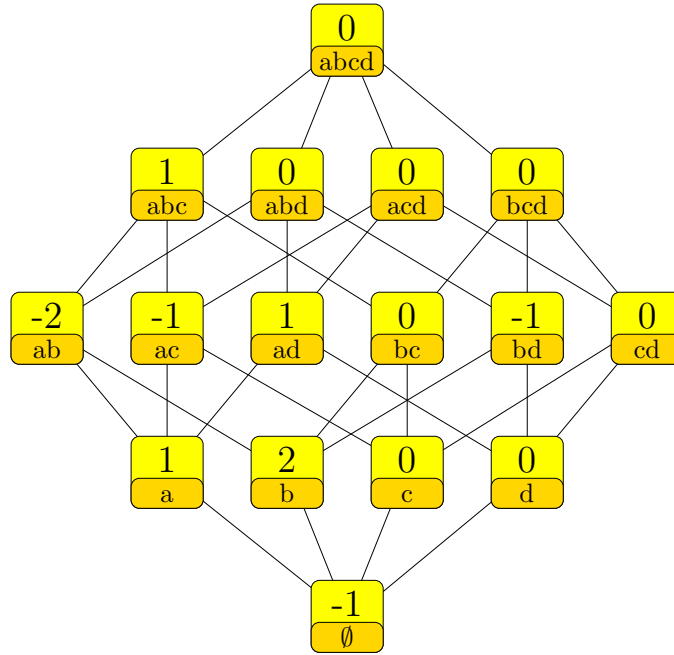
0.14.8.2 Differential imset (66)



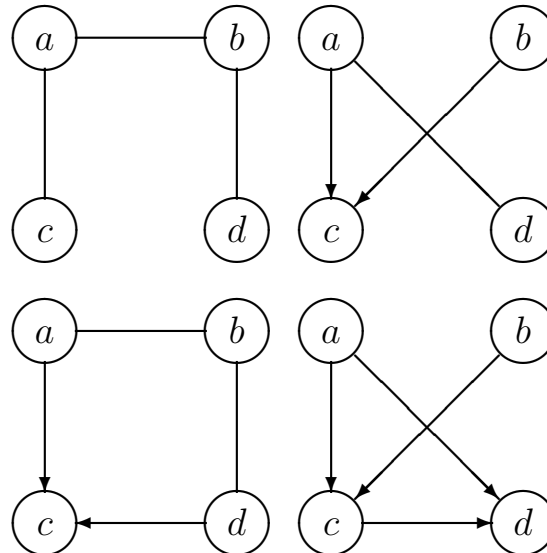
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + 2\delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



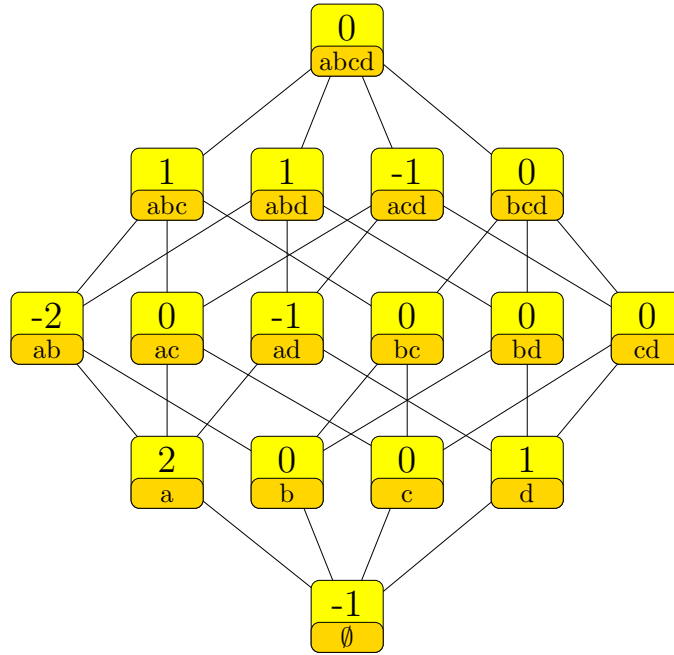
0.14.8.3 Differential imset (67)



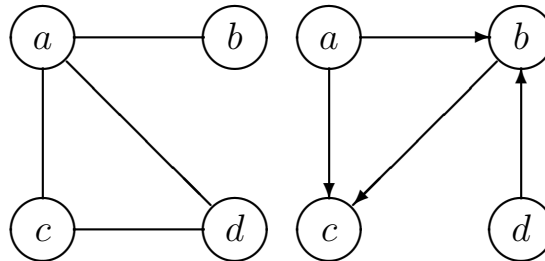
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + 2\delta_{\{b\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|a \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.14.8.4 Differential imset (68)

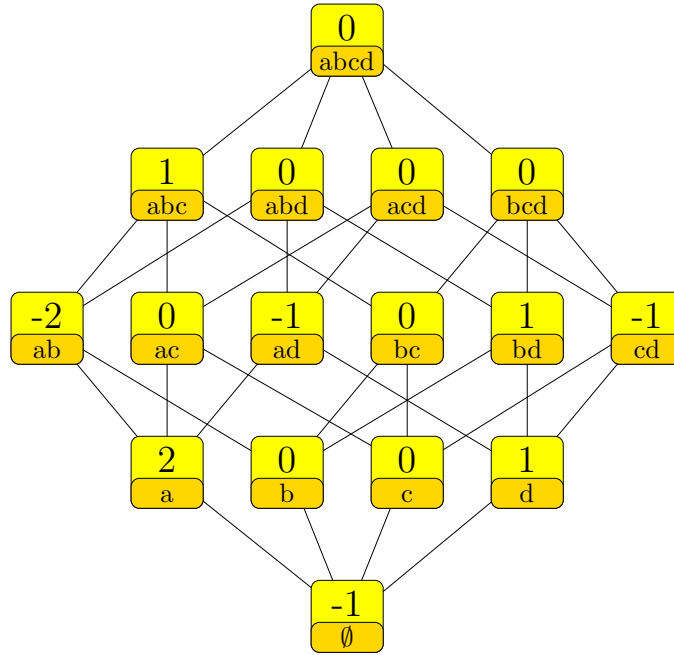


$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 & = -u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 & = (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

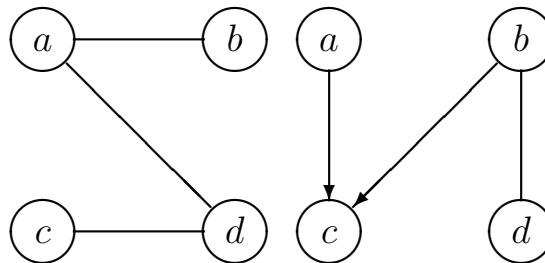




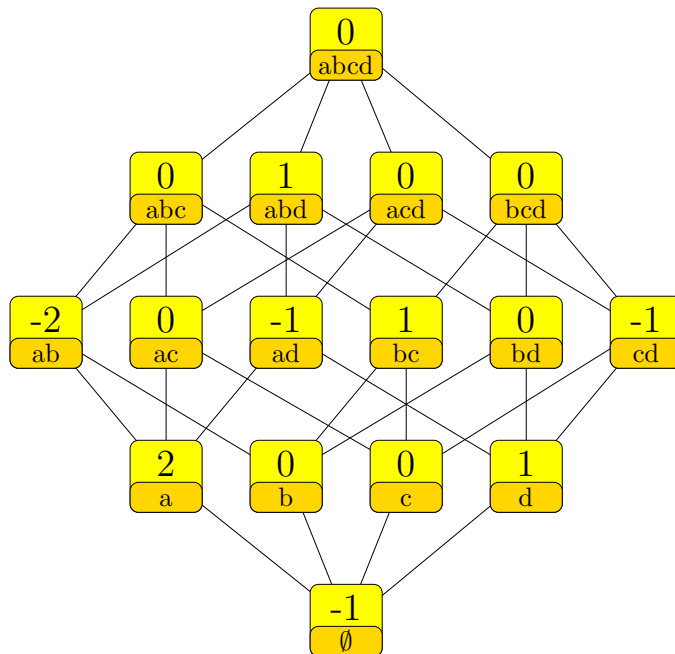
0.14.8.5 Differential imset (69)



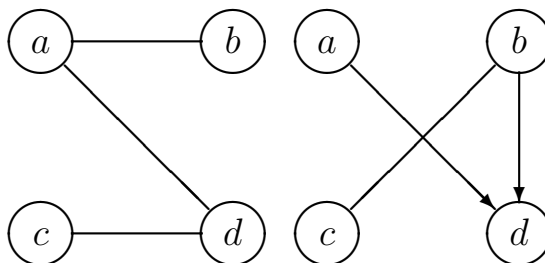
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{a\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,b|\emptyset} - u_{\langle c,d|ab} + u_{\langle b,d|ac} + u_{\langle b,c|a} - u_{\langle a,d|b} + u_{\langle a,c|d} \\
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} + \delta_{\{a,b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



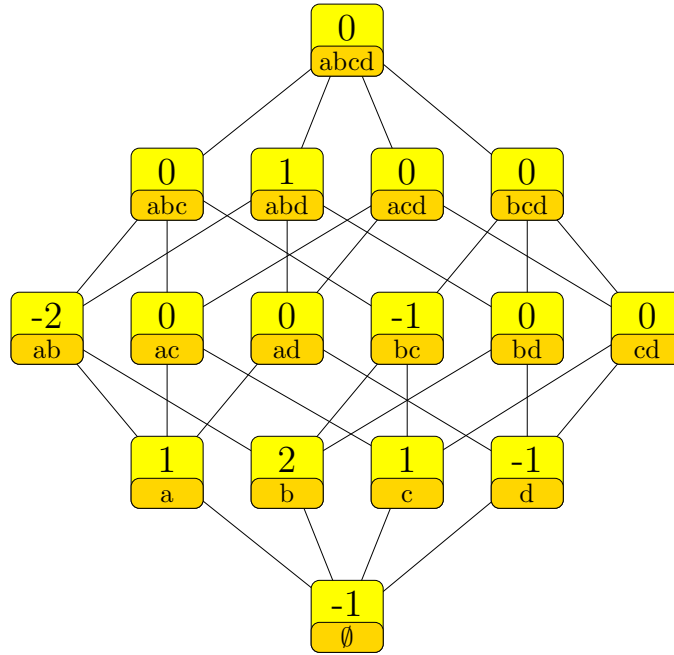
0.14.8.6 Differential imset (70)



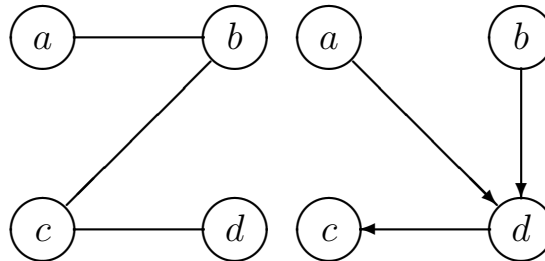
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{a\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} + \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



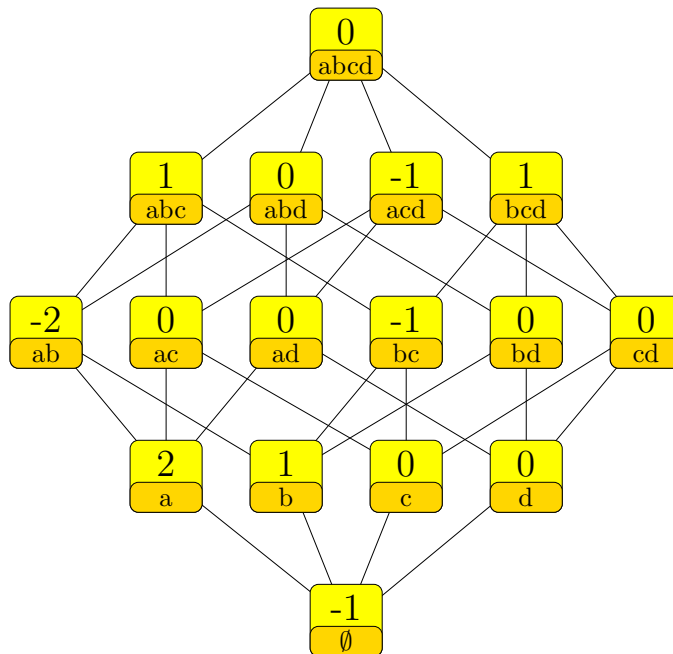
0.14.8.7 Differential imset (71)



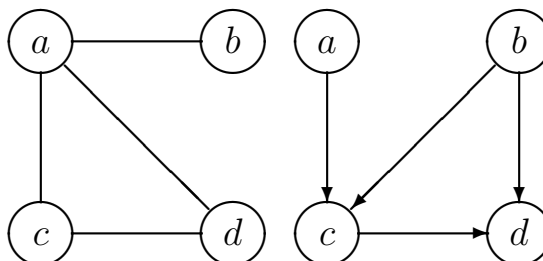
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 2\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



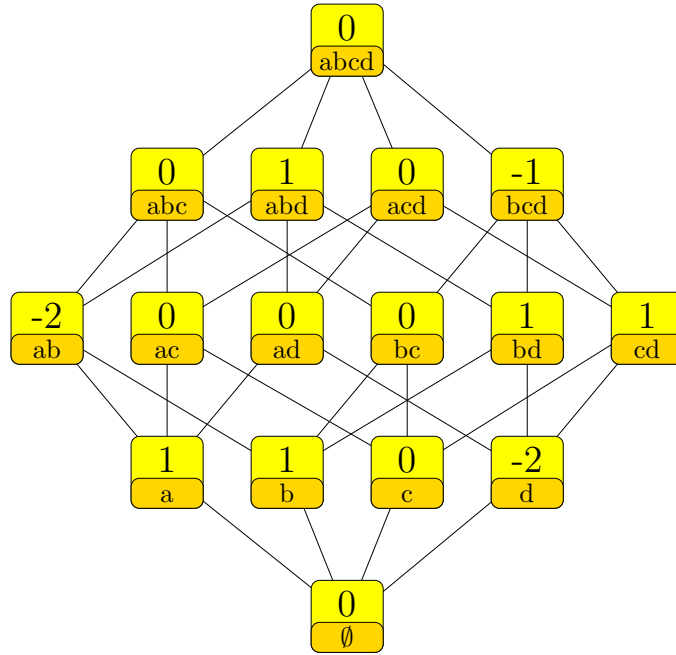
0.14.8.8 Differential imset (72)



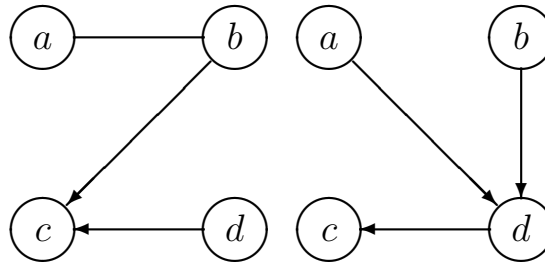
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{a\}} + \delta_{\{b\}} - 2\delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



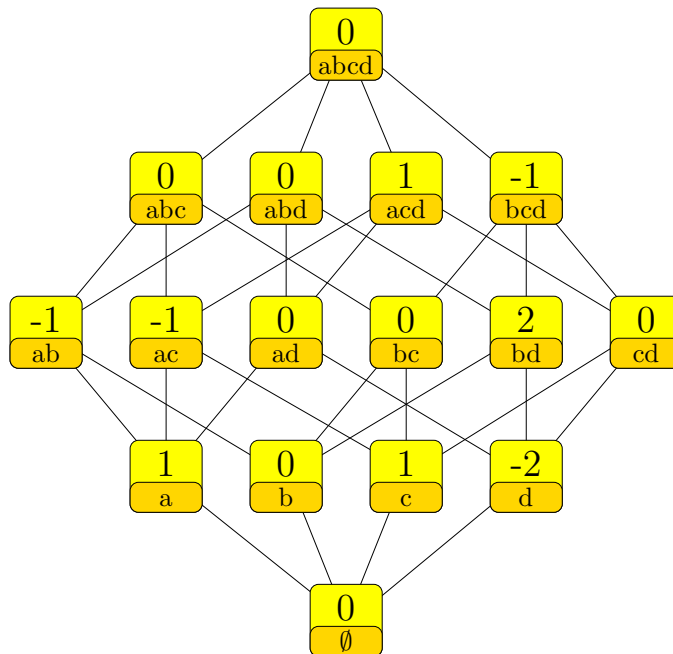
0.14.8.9 Differential imset (73)



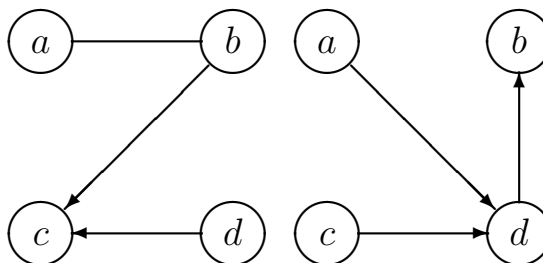
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - 2\delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



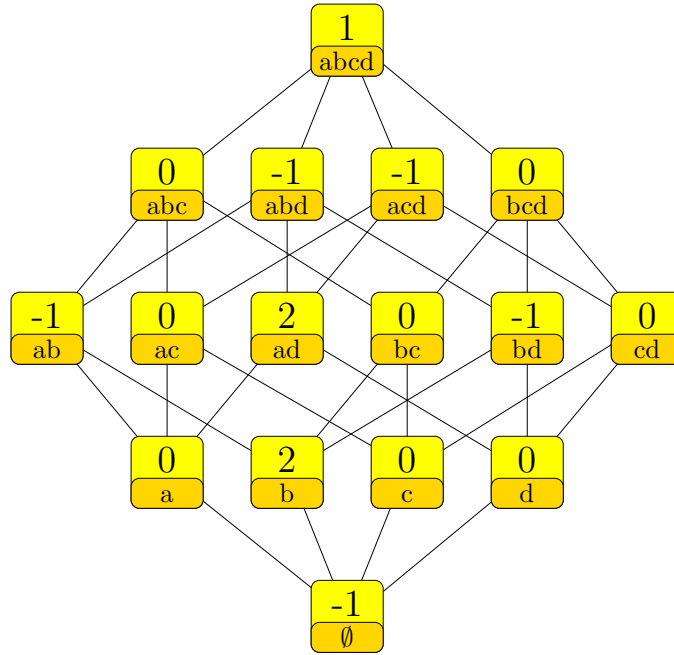
0.14.8.10 Differential imset (74)



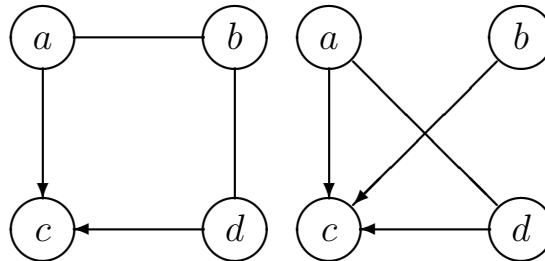
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + 2\delta_{\{b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|c \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



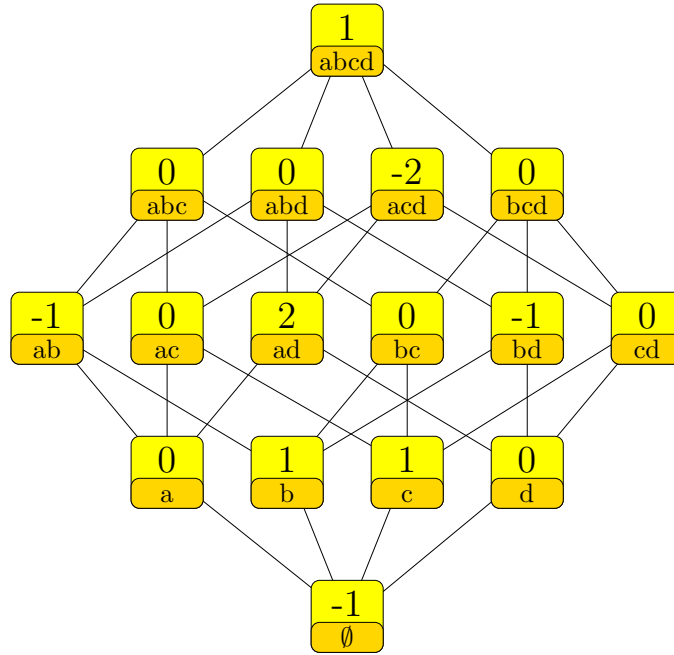
0.14.8.11 Differential imset (75)



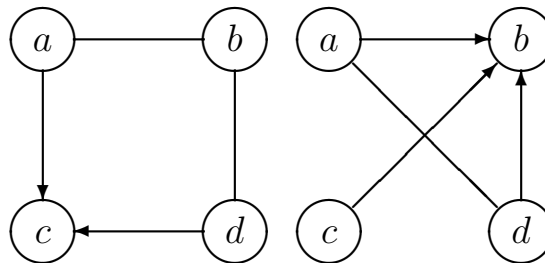
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{b\}} - \delta_{\{a,b\}} + 2\delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|ad \rangle} - u_{\langle b,d|a \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



0.14.8.12 Differential imset (76)



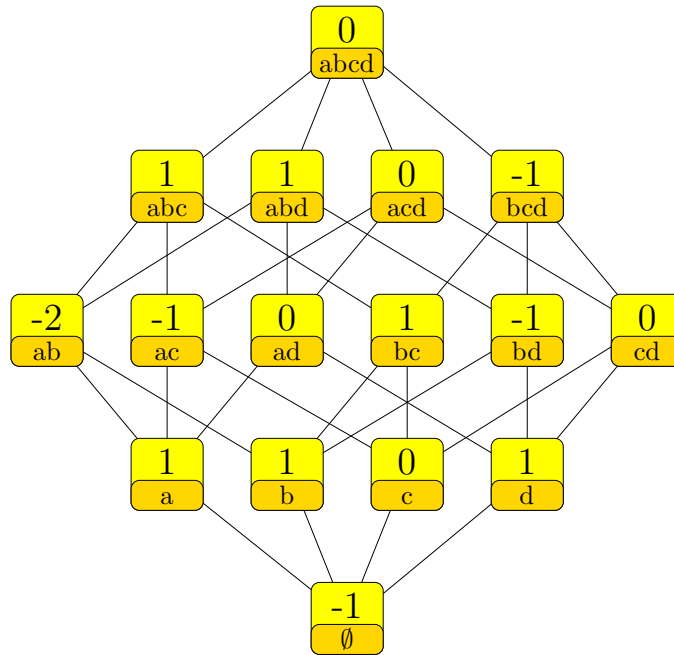
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} + 2\delta_{\{a,d\}} - \delta_{\{b,d\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,d|b \rangle} - u_{\langle c,d|a \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



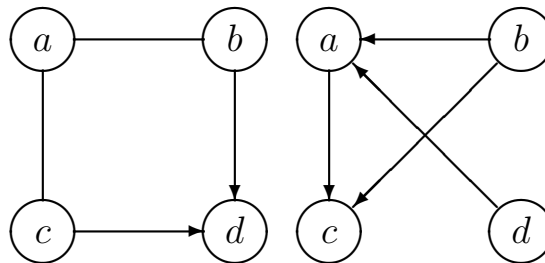


0.14.11 Number of nonzero values 11

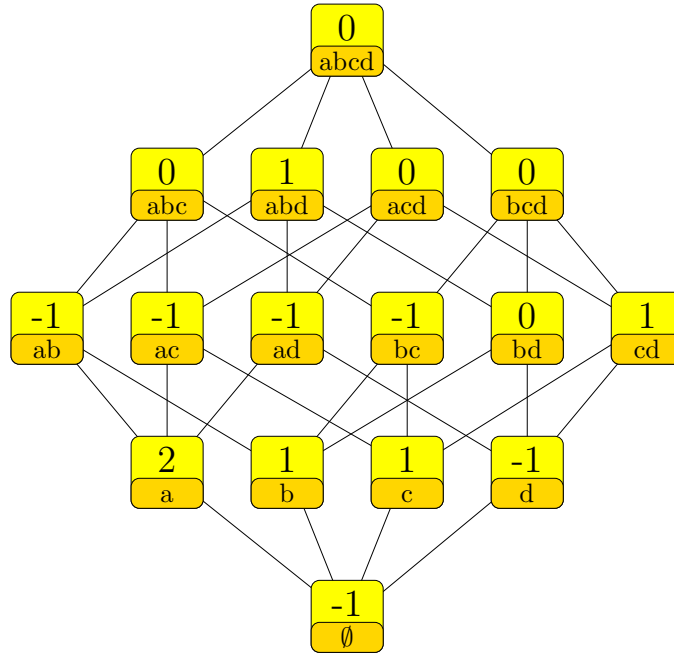
0.14.11.1 Differential imset (77)



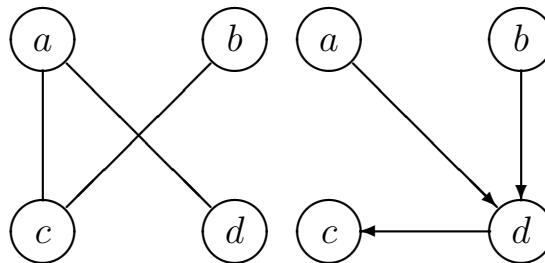
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 & = -u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 & = (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.14.11.2 Differential imset (78)



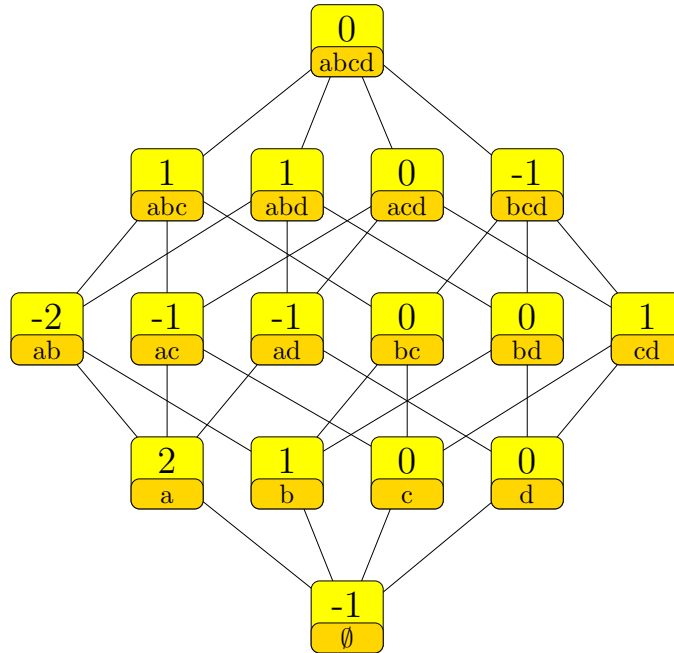
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,c|\emptyset} - u_{\langle b,c|\emptyset} + u_{\langle c,d|\emptyset} + u_{\langle b,d|a} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



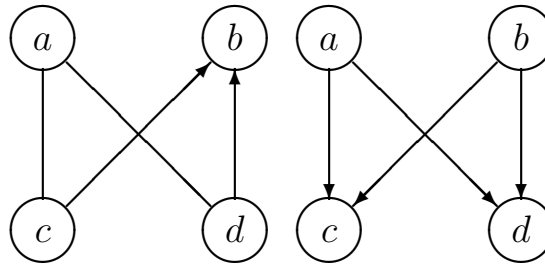
### 0.16 Squared Euclidean length 16

#### 0.16.10 Number of nonzero values 10

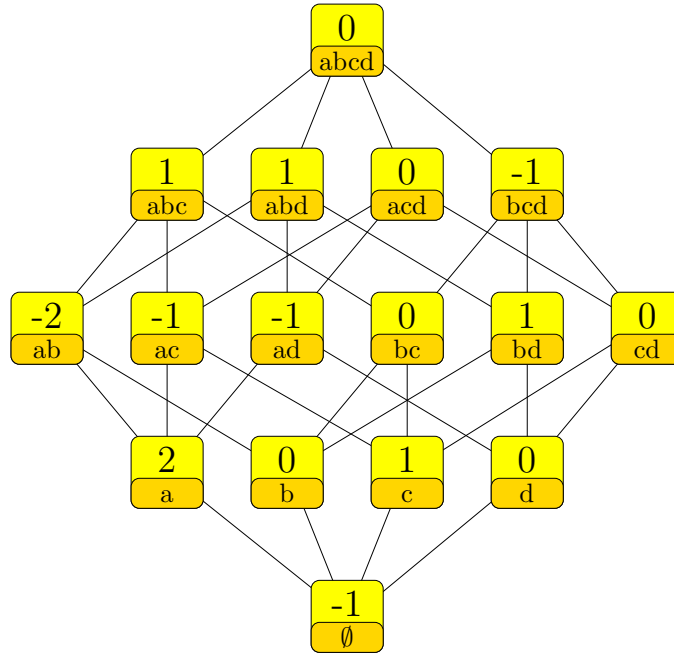
##### 0.16.10.1 Differential imset (79)



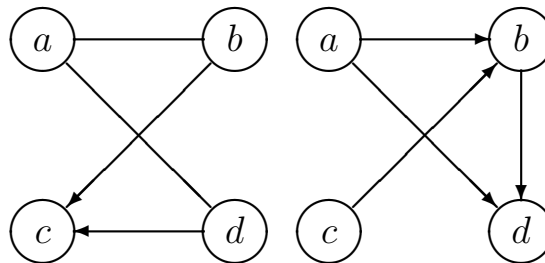
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} + u_{\langle c,d|a \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



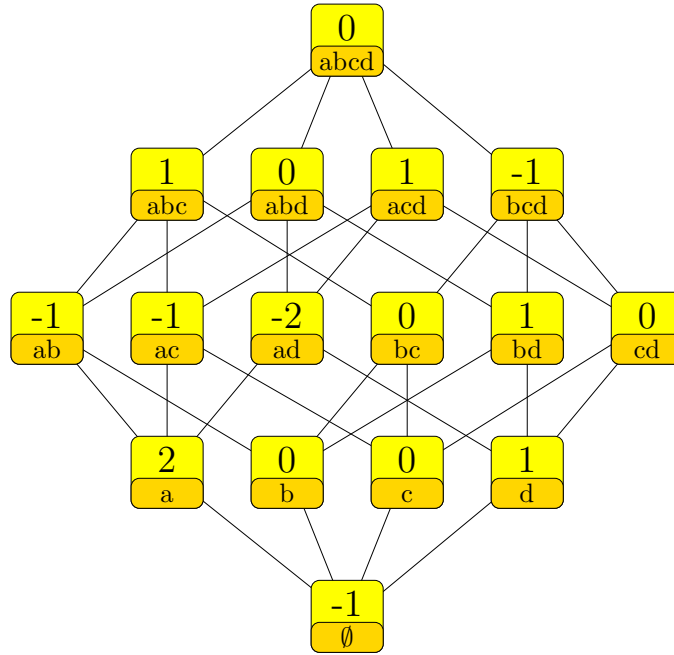
0.16.10.2 Differential imset (80)



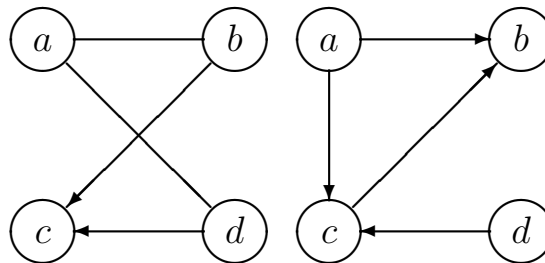
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 & = -u_{\langle a,c|\emptyset\rangle} - u_{\langle c,d|ab\rangle} + u_{\langle a,c|bd\rangle} + u_{\langle b,d|a\rangle} \\
 & = (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



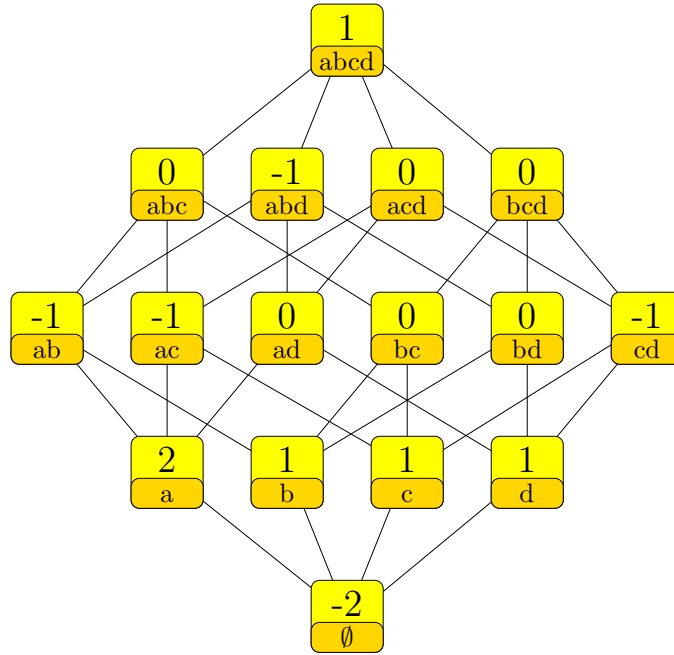
0.16.10.3 Differential imset (81)



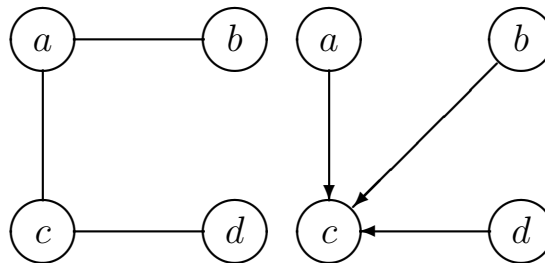
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - 2\delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.16.10.4 Differential imset (82)



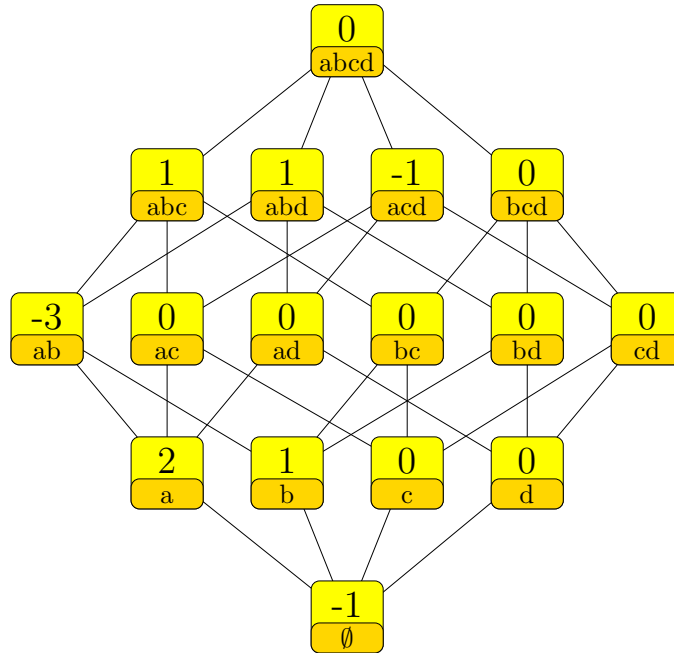
$$\begin{aligned}
 & -2\delta_\emptyset + 2\delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



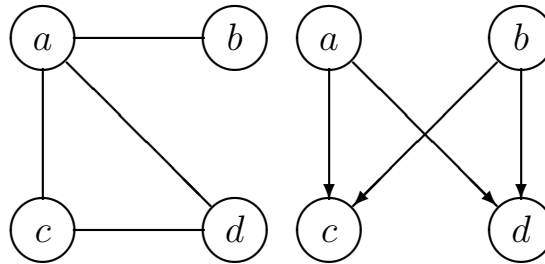
### 0.18 Squared Euclidean length 18

#### 0.18.7 Number of nonzero values 7

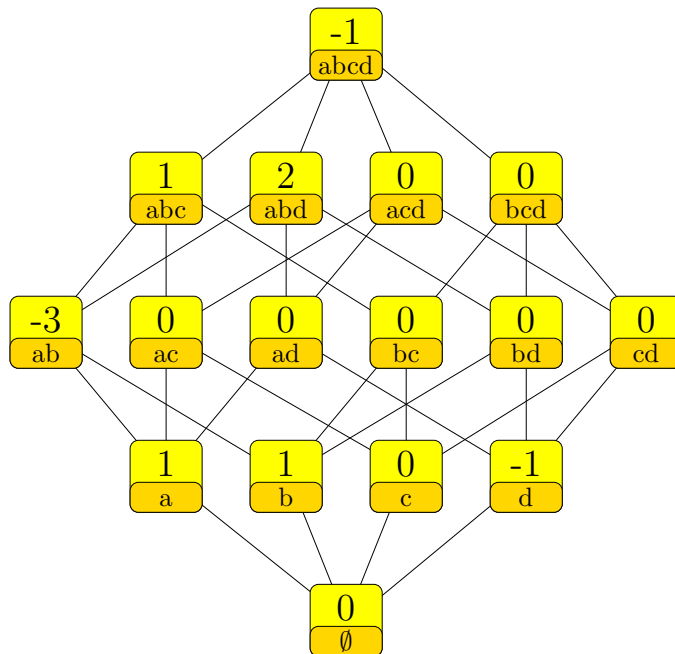
##### 0.18.7.1 Differential imset (83)



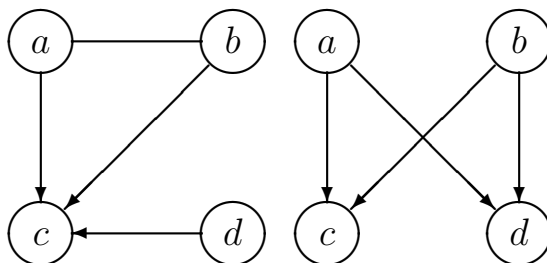
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} - 3\delta_{\{a,b\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



0.18.7.2 Differential imset (84)



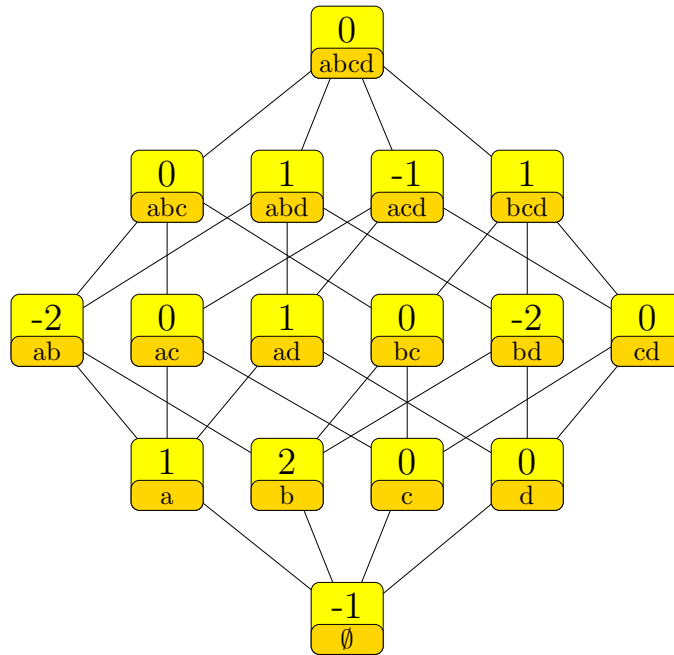
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - 3\delta_{\{a,b\}} + \delta_{\{a,b,c\}} + 2\delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



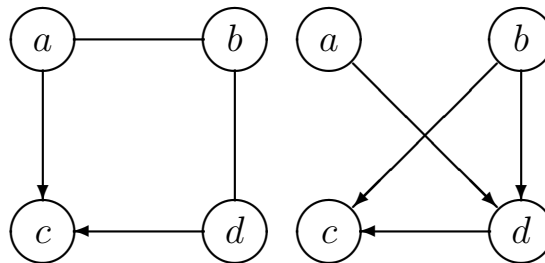


0.18.9 Number of nonzero values 9

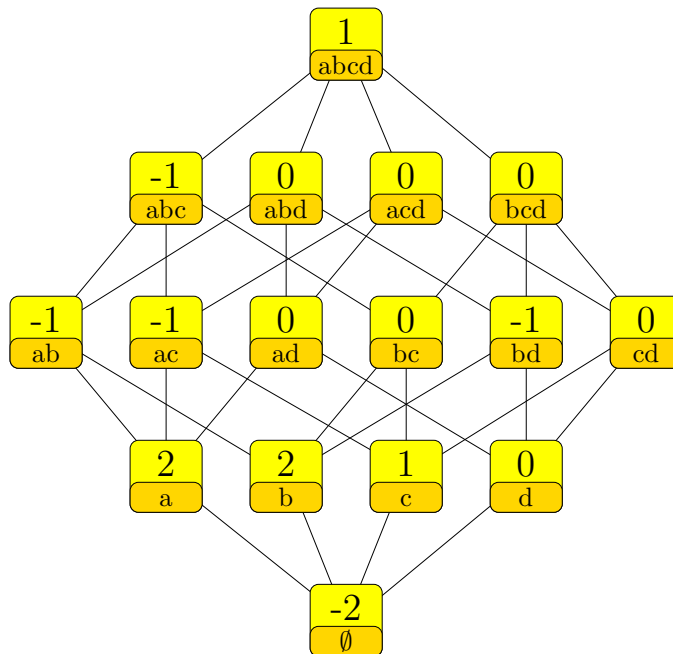
0.18.9.1 Differential imset (85)



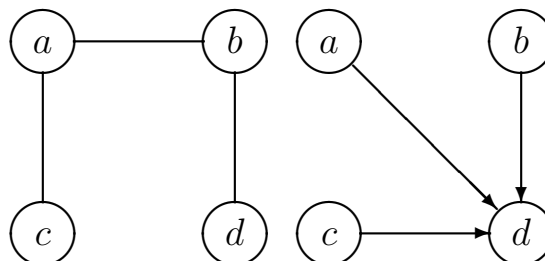
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 2\delta_{\{b\}} - 2\delta_{\{a,b\}} + \delta_{\{a,d\}} - 2\delta_{\{b,d\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|ad \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



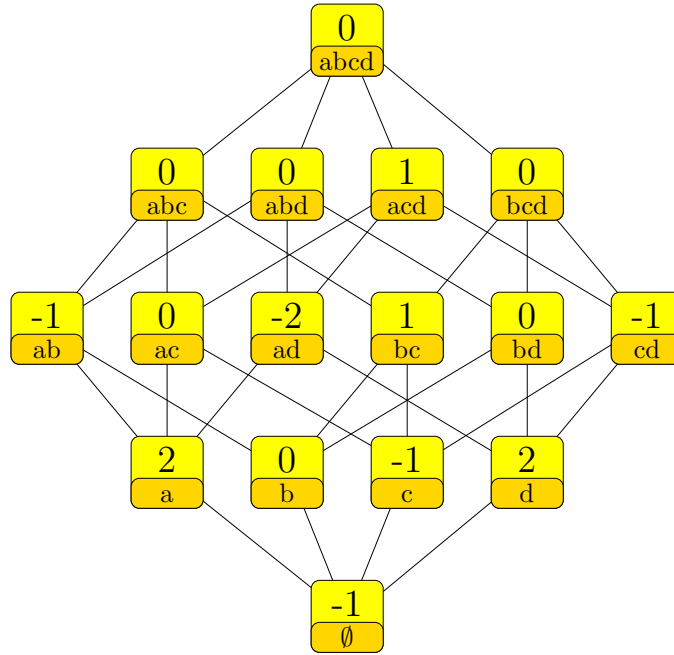
0.18.9.2 Differential imset (86)



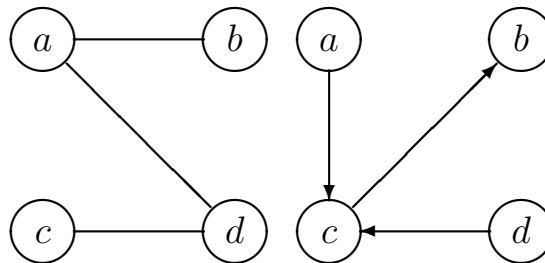
$$\begin{aligned}
 & -2\delta_\emptyset + 2\delta_{\{a\}} + 2\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



0.18.9.3 Differential imset (87)



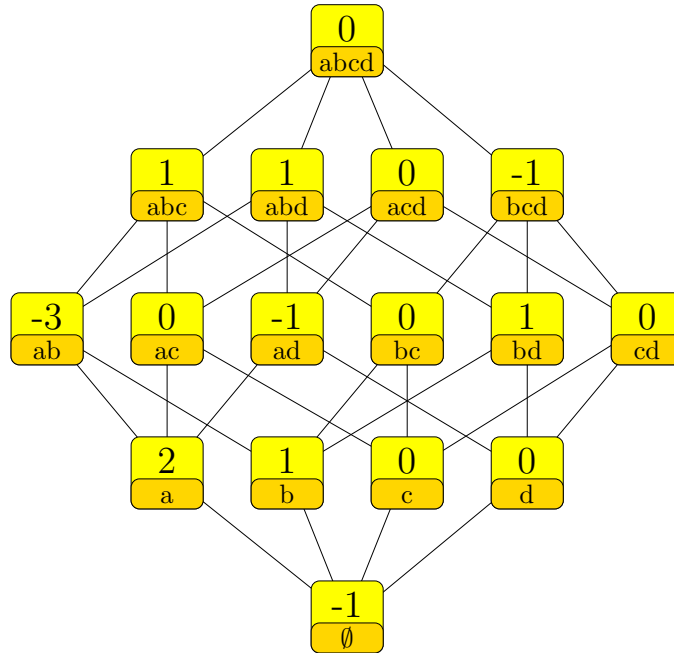
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} - \delta_{\{c\}} + 2\delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|c \rangle} + u_{\langle a,c|d \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



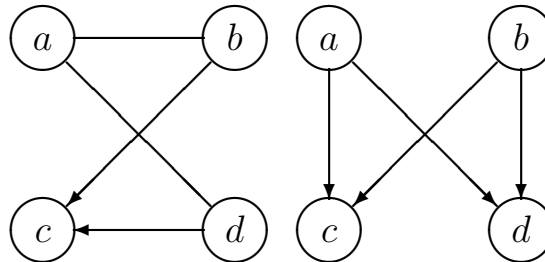
## 0.20 Squared Euclidean length 20

### 0.20.9 Number of nonzero values 9

#### 0.20.9.1 Differential imset (88)



$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} - 3\delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



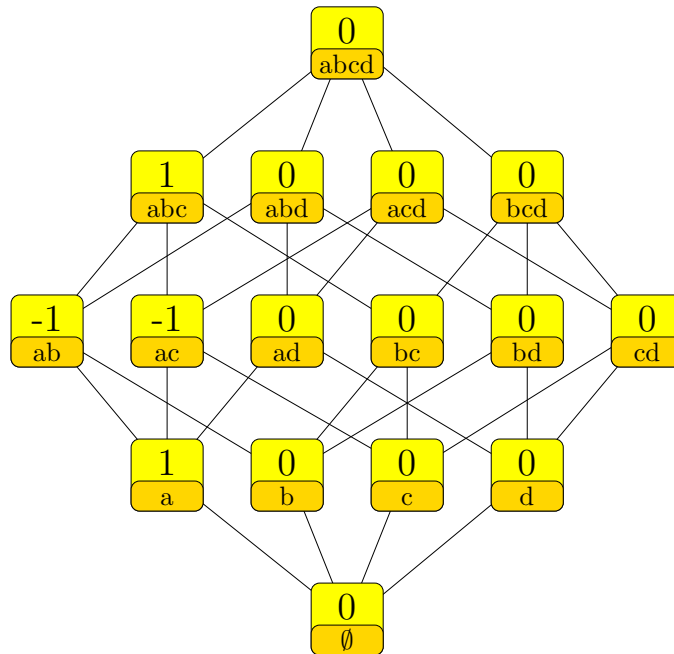
# Chapter 1

## Degree difference 1

### 1.4 Squared Euclidean length 4

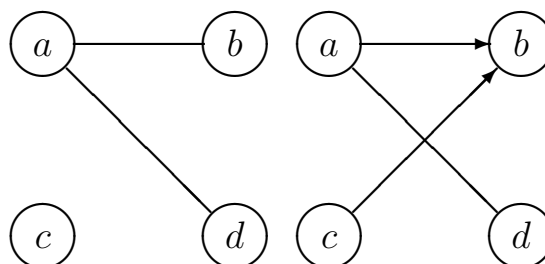
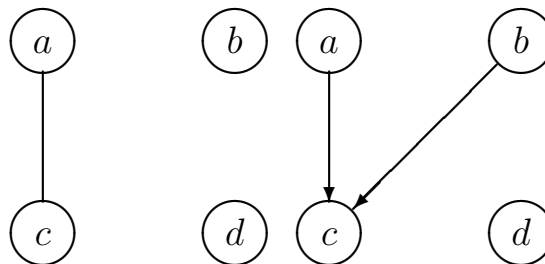
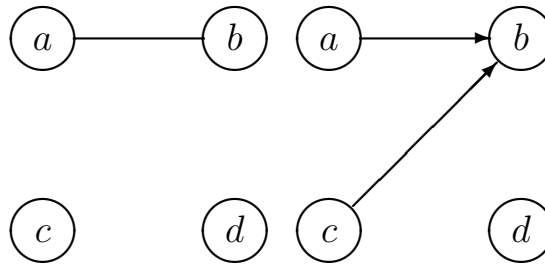
#### 1.4.4 Number of nonzero values 4

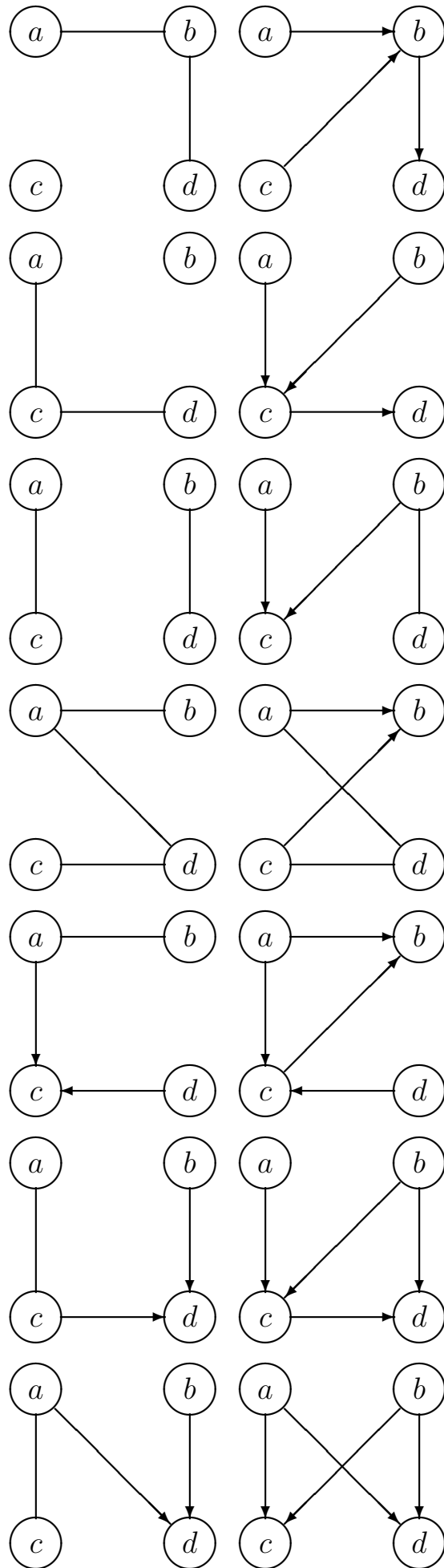
##### 1.4.4.1 Differential imset (89)

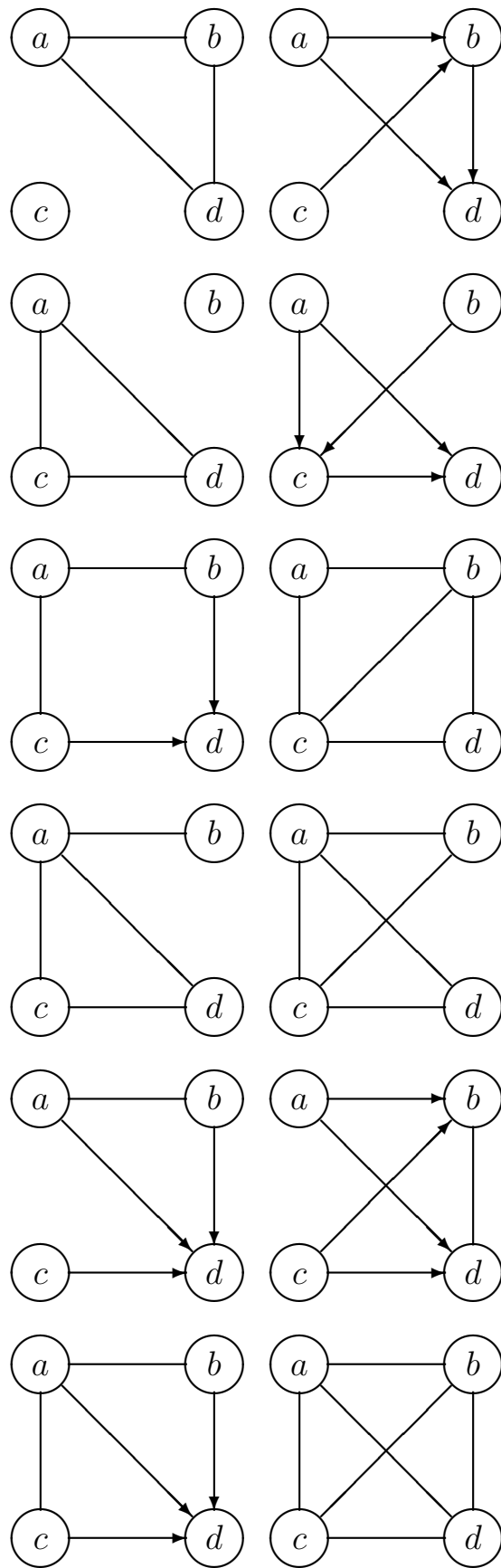


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} \\
 &= u_{(b,c|a)} \\
 &= (+2\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

$$\begin{aligned}
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - ()
 \end{aligned}$$

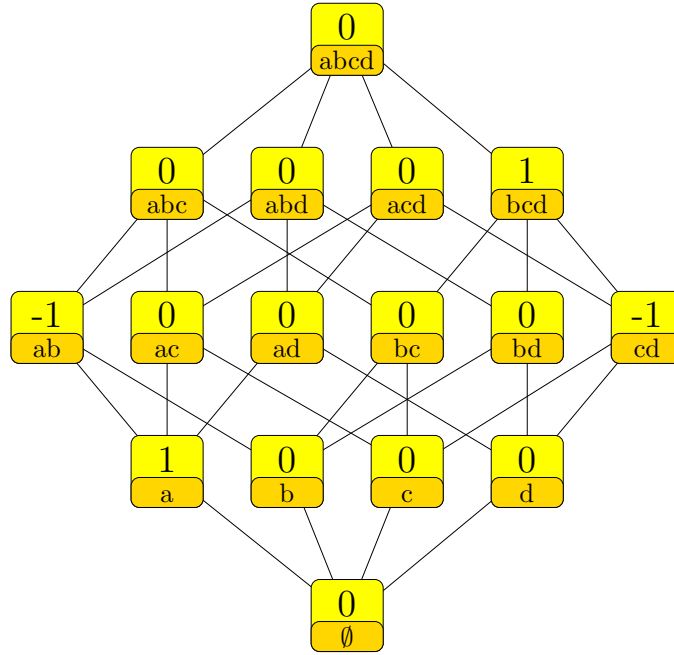




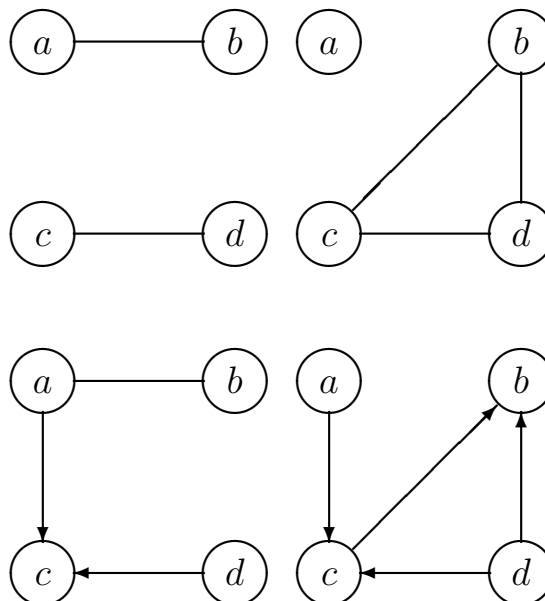


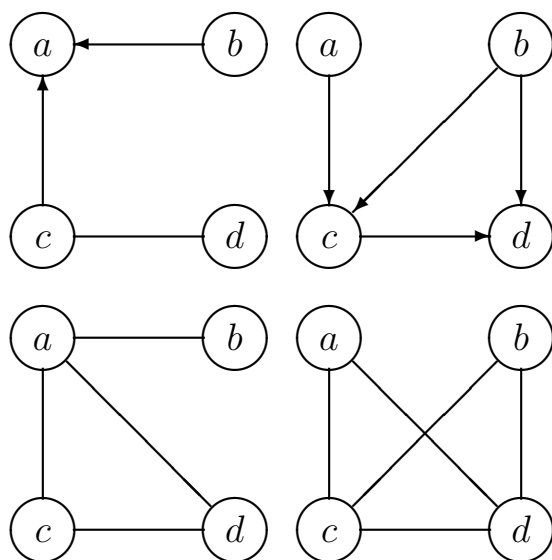


1.4.4.2 Differential inset (90)

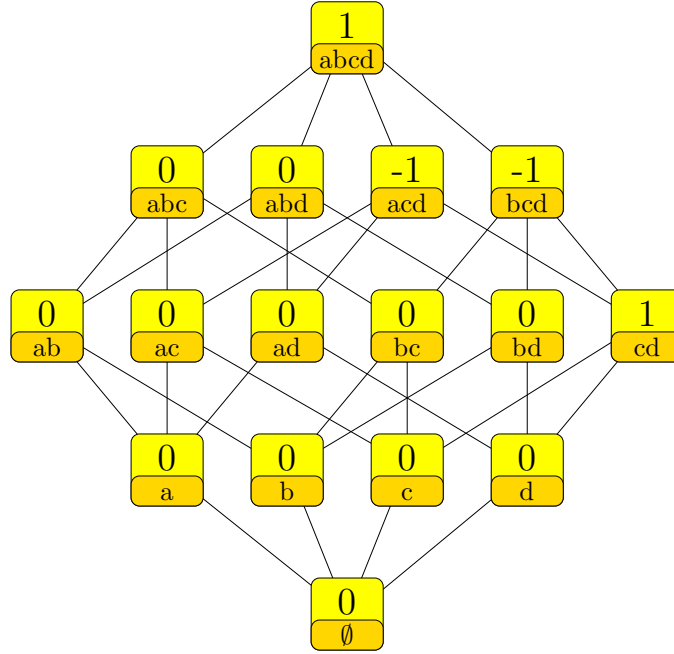


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

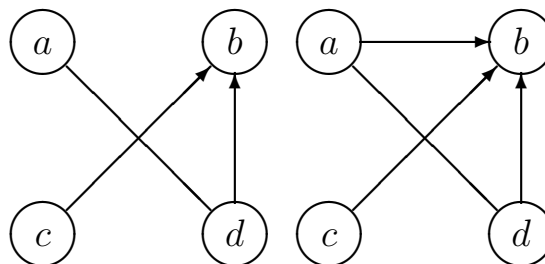


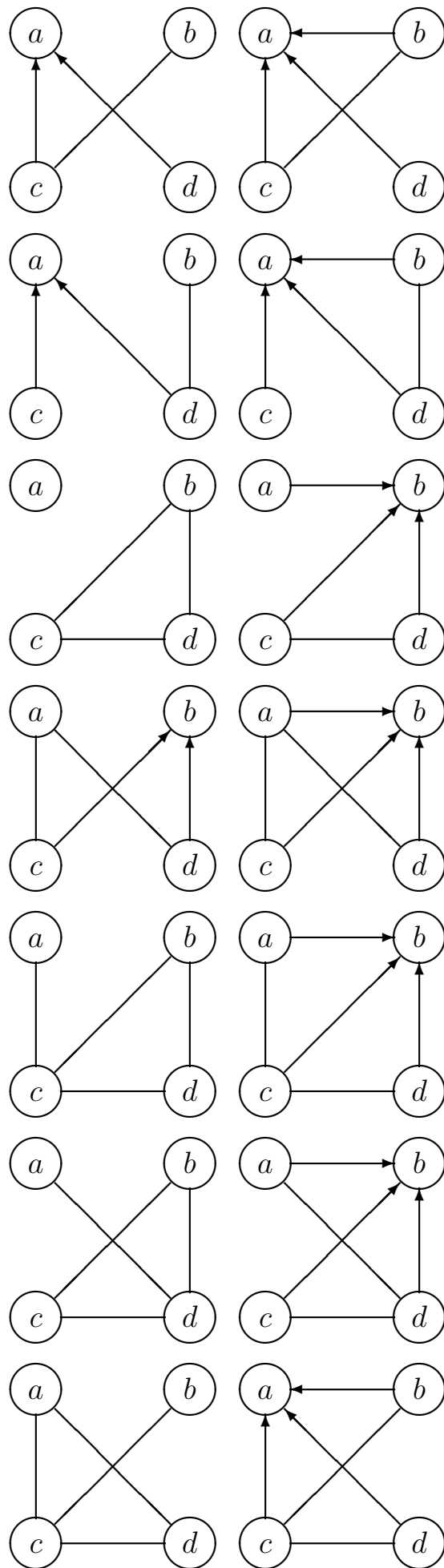


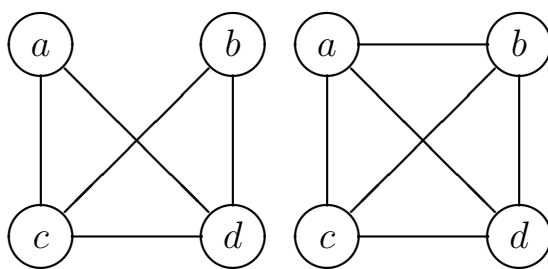
1.4.4.3 Differential inset (91)



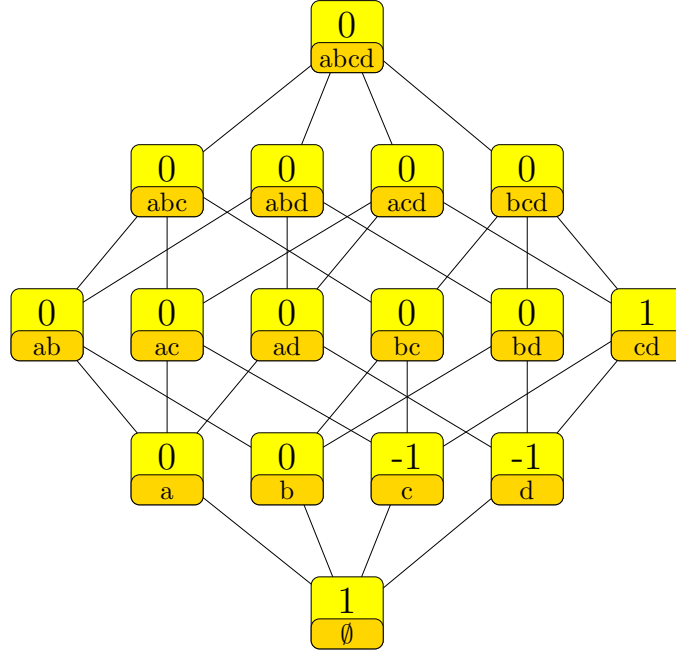
$$\begin{aligned}
 & \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - ()
 \end{aligned}$$



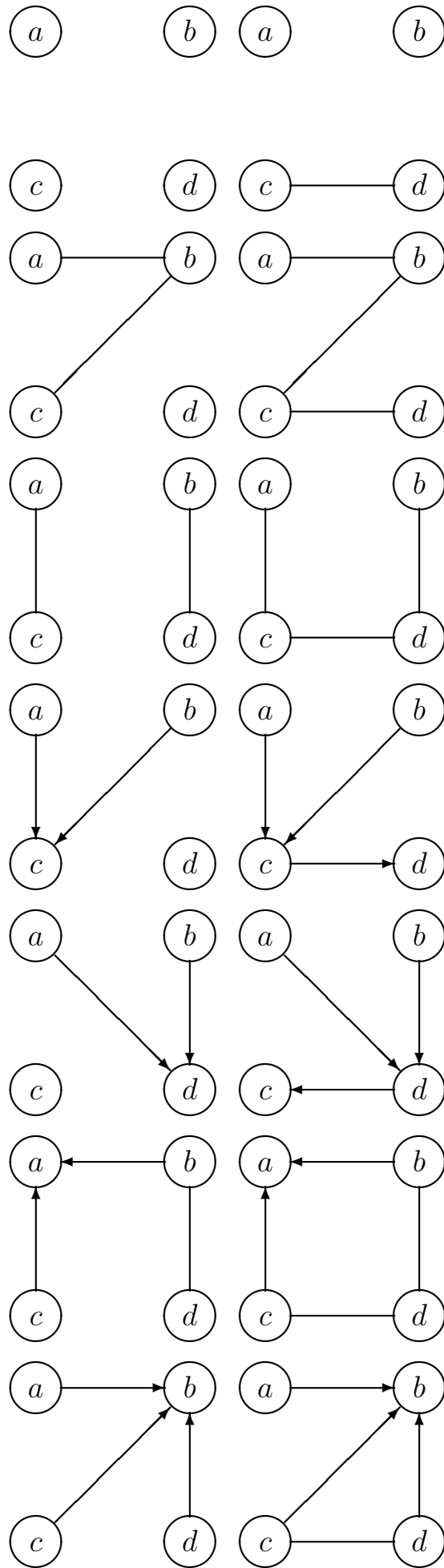


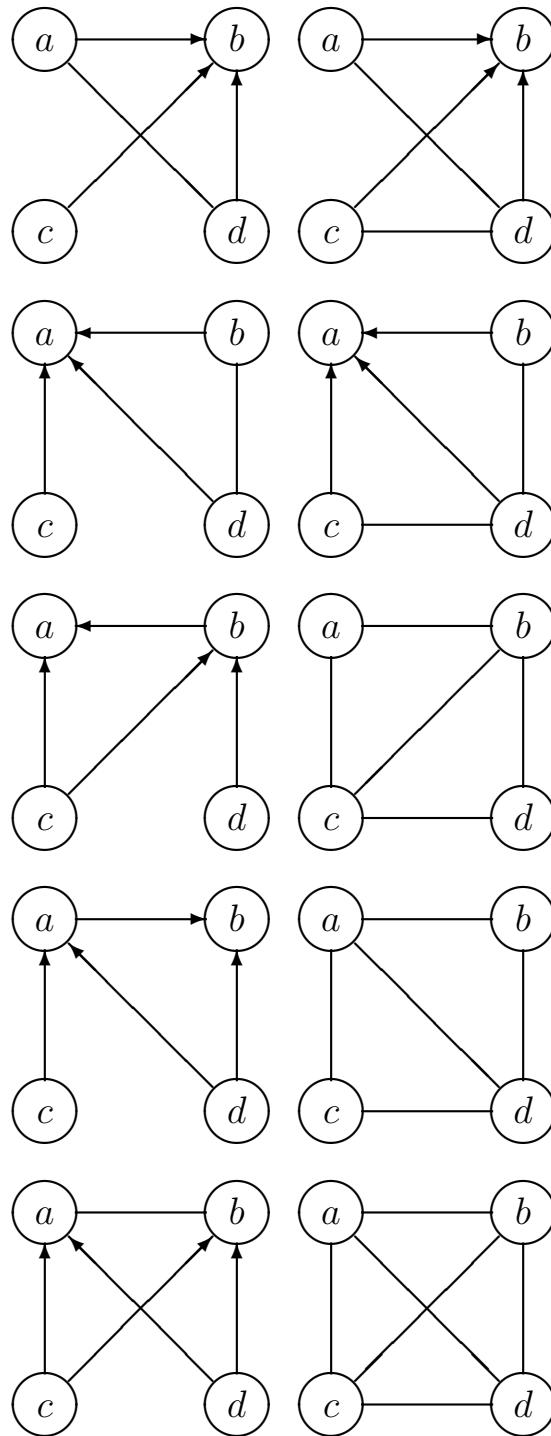


## 1.4.4.4 Differential inset (92)



$$\begin{aligned}
& \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} \\
&= u_{\langle c,d|\emptyset \rangle} \\
&= (+3\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
&= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
&= (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
&= (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
&= (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c,d\}}) \\
&\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}}) \\
&\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
&\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
&\quad - (\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
&= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}}) \\
&\quad - ()
\end{aligned}$$



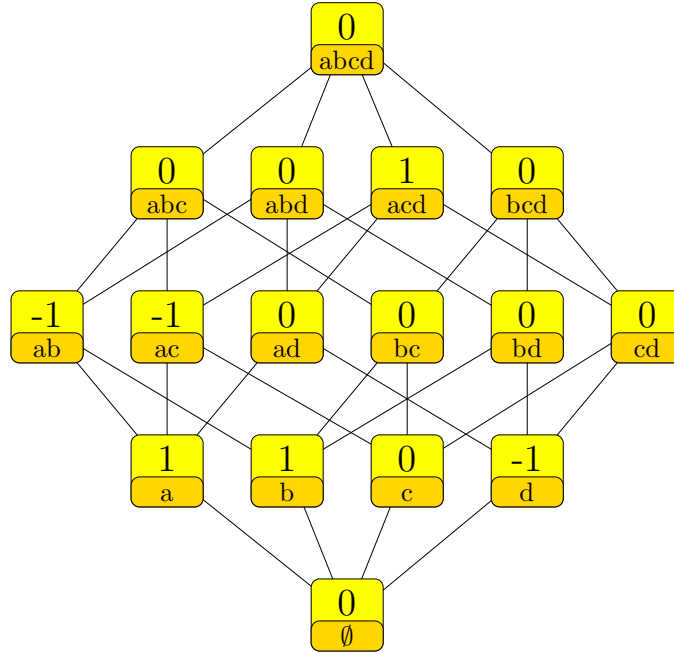




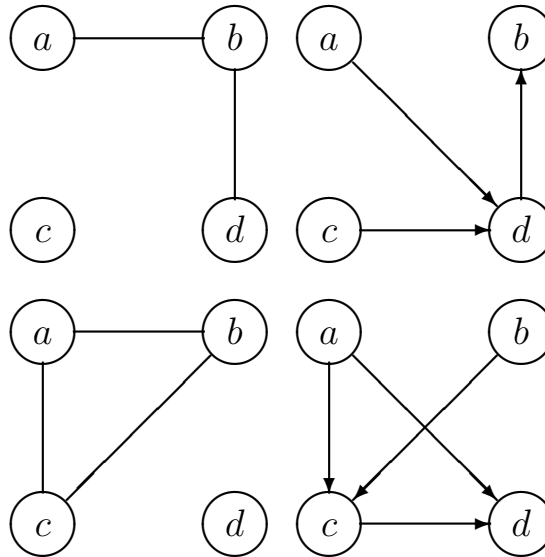
### 1.6 Squared Euclidean length 6

#### 1.6.6 Number of nonzero values 6

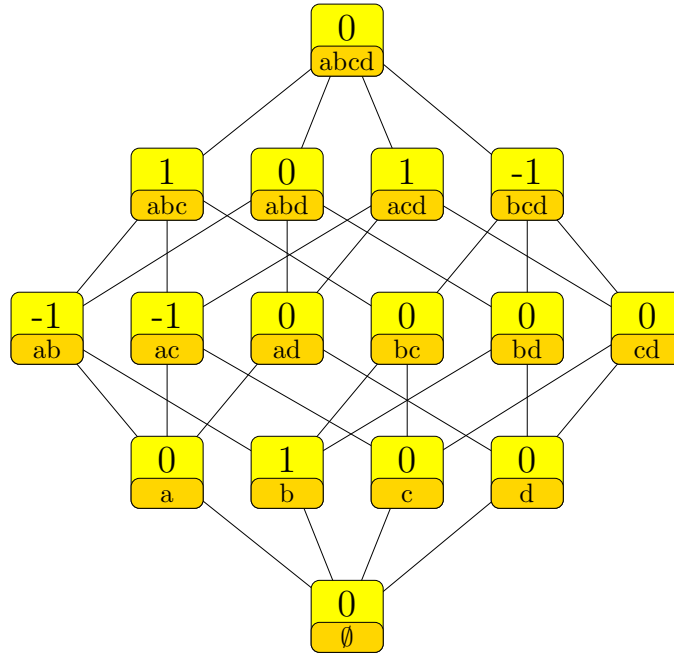
##### 1.6.6.1 Differential inset (93)



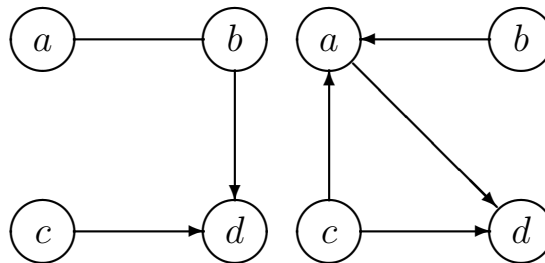
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



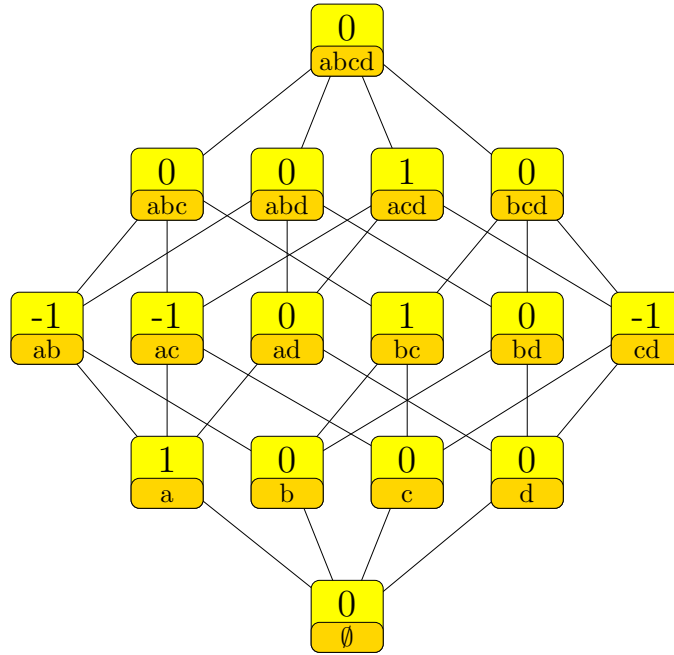
1.6.6.2 Differential imset (94)



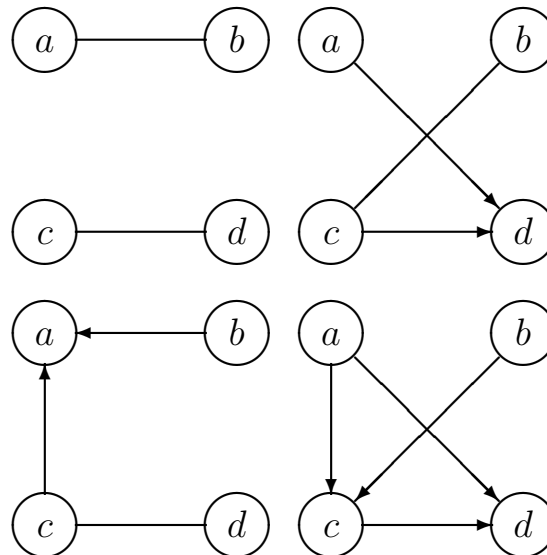
$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



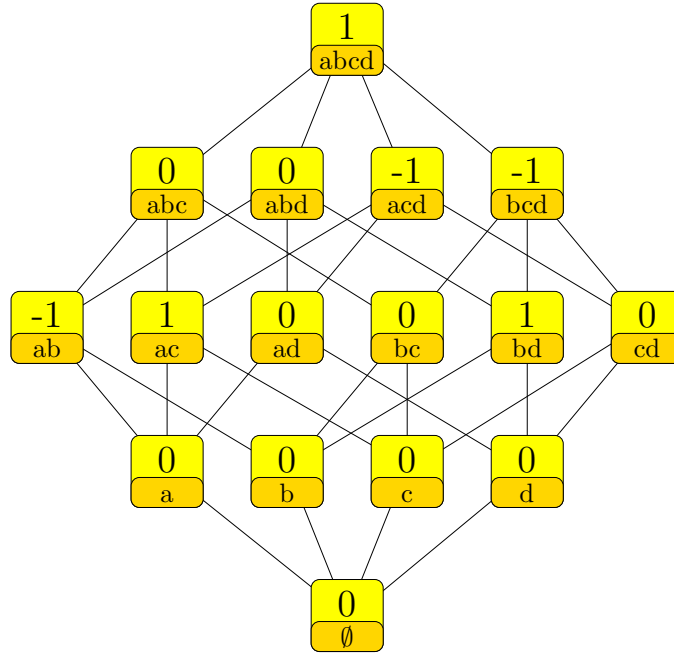
1.6.6.3 Differential inset (95)



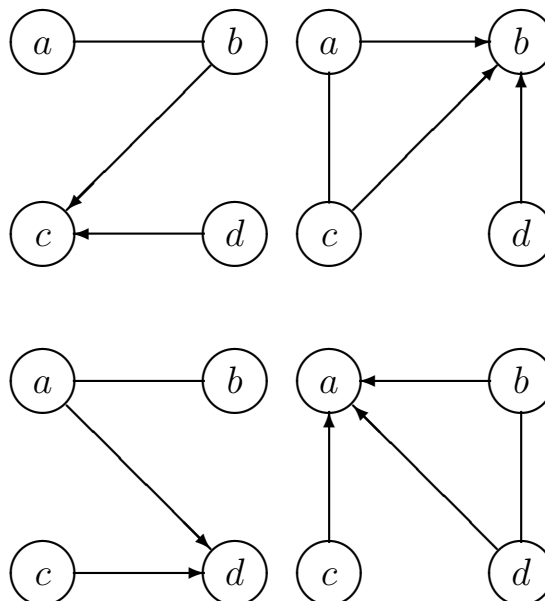
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

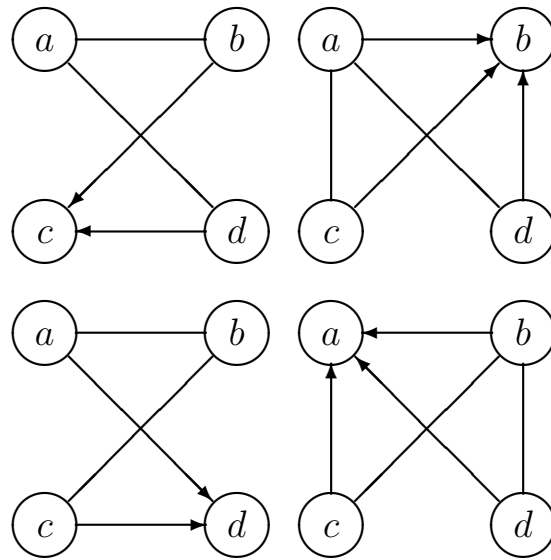


1.6.6.4 Differential inset (96)

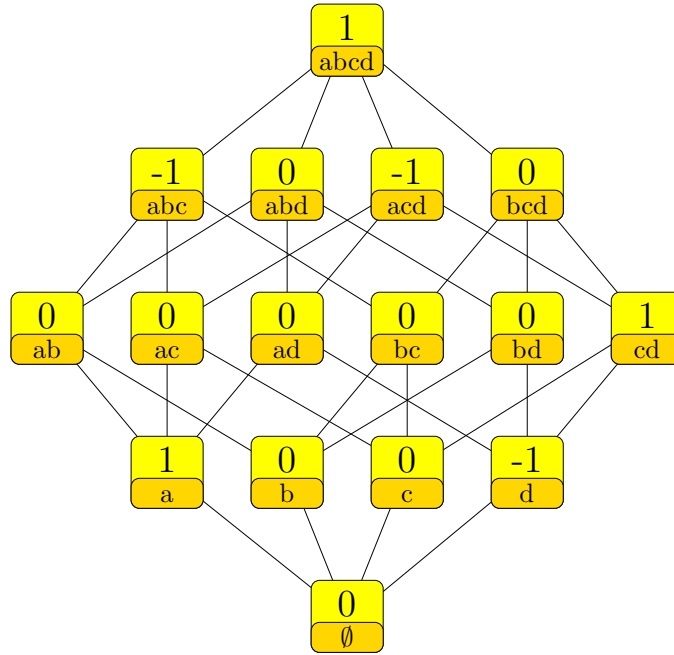


$$\begin{aligned}
 & -\delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} - u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$

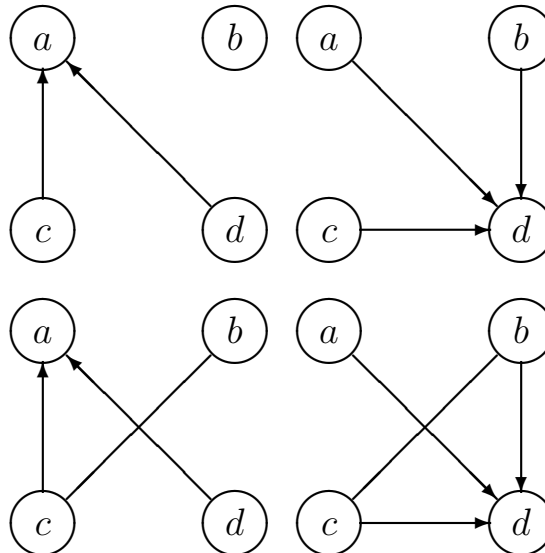




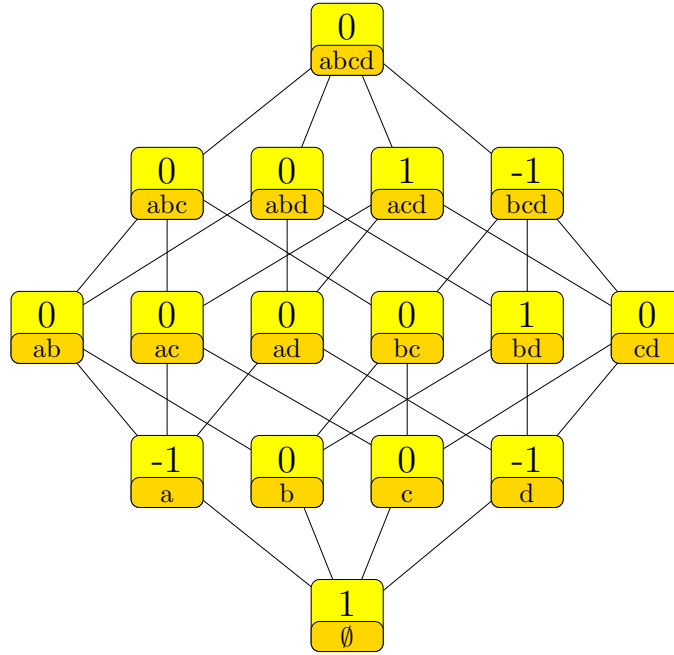
1.6.6.5 Differential inset (97)



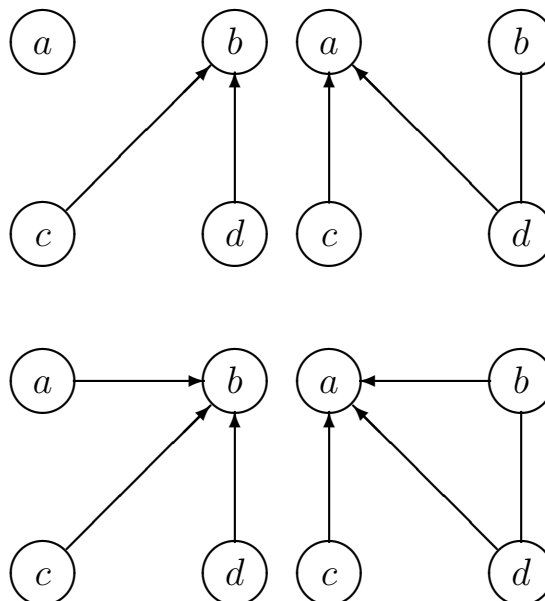
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$

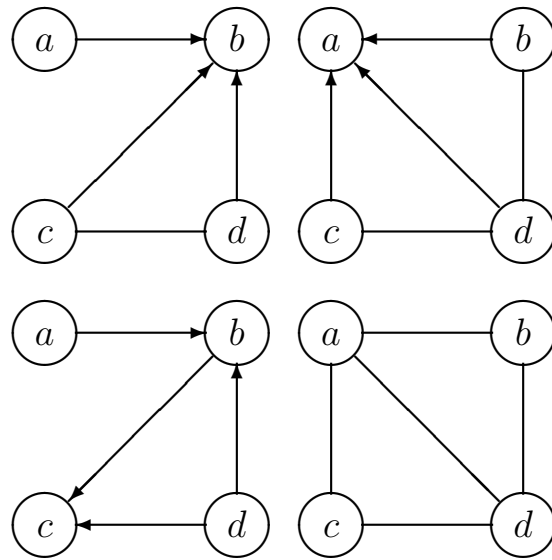


1.6.6.6 Differential inset (98)



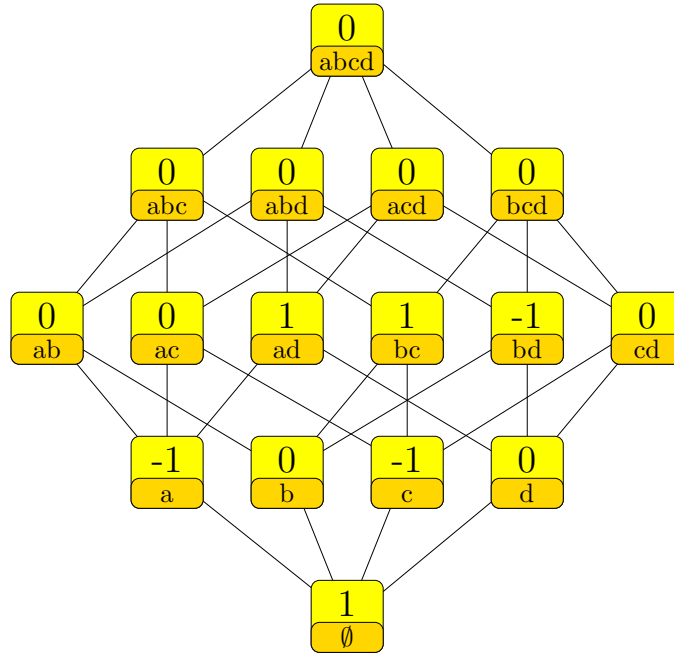
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



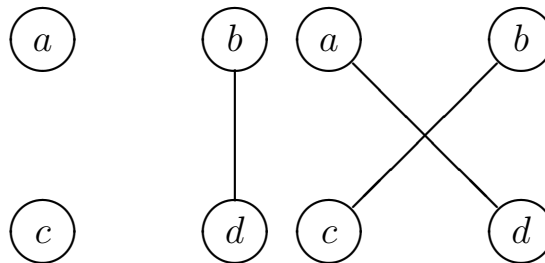




1.6.6.7 Differential imset (99)



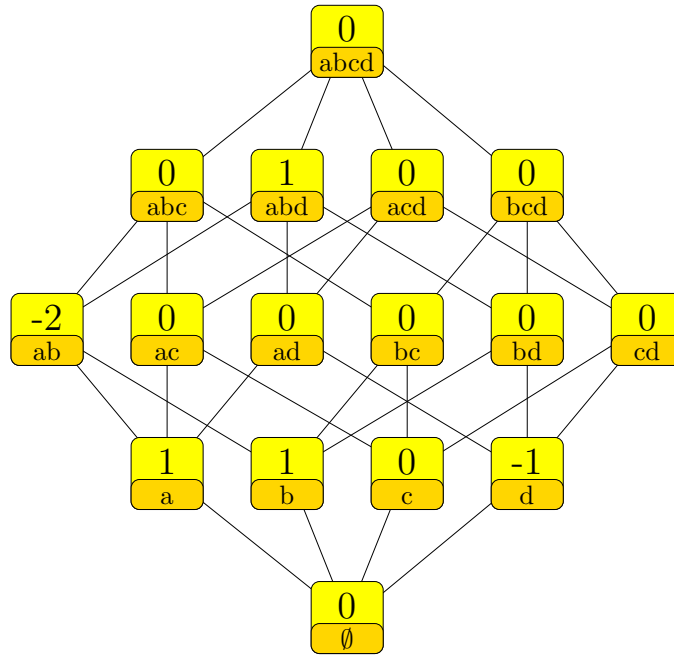
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle b,d|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



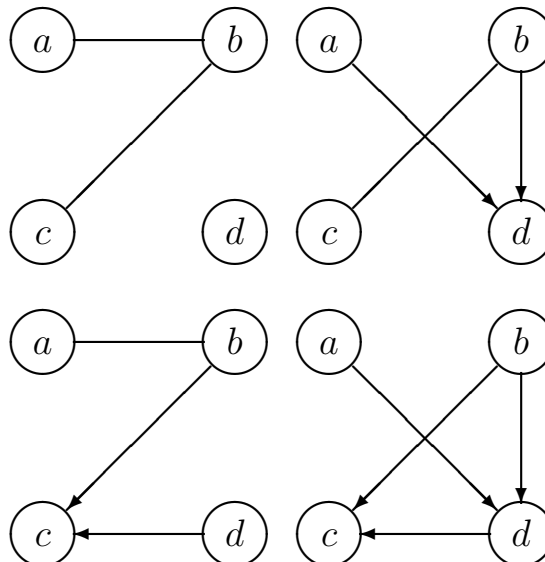
### 1.8 Squared Euclidean length 8

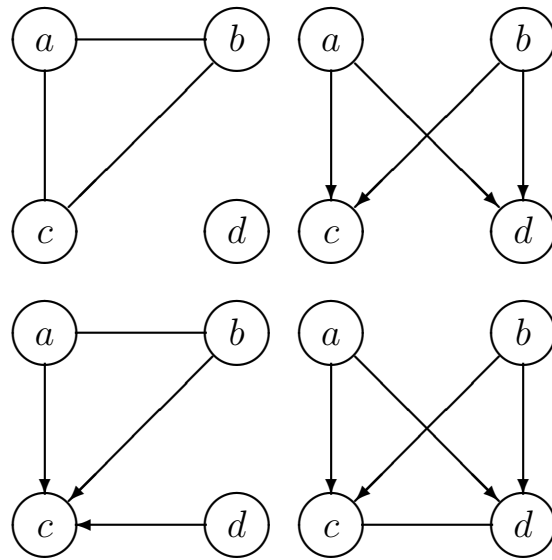
#### 1.8.5 Number of nonzero values 5

##### 1.8.5.1 Differential imset (100)

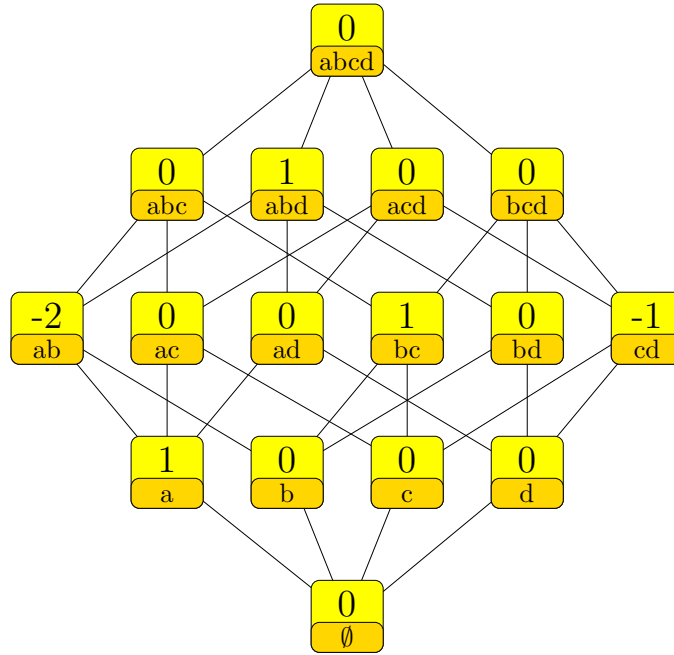


$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$

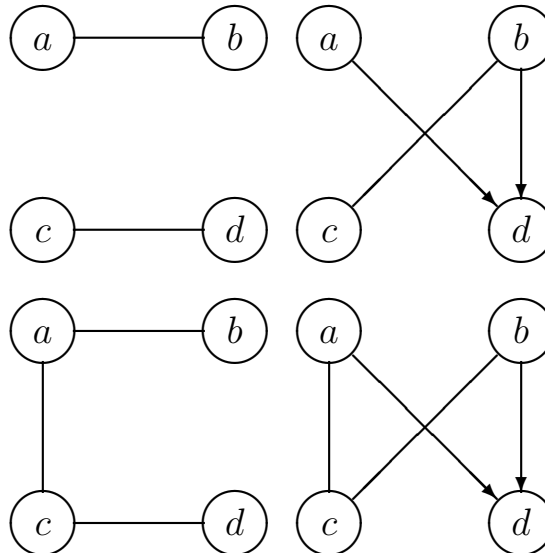




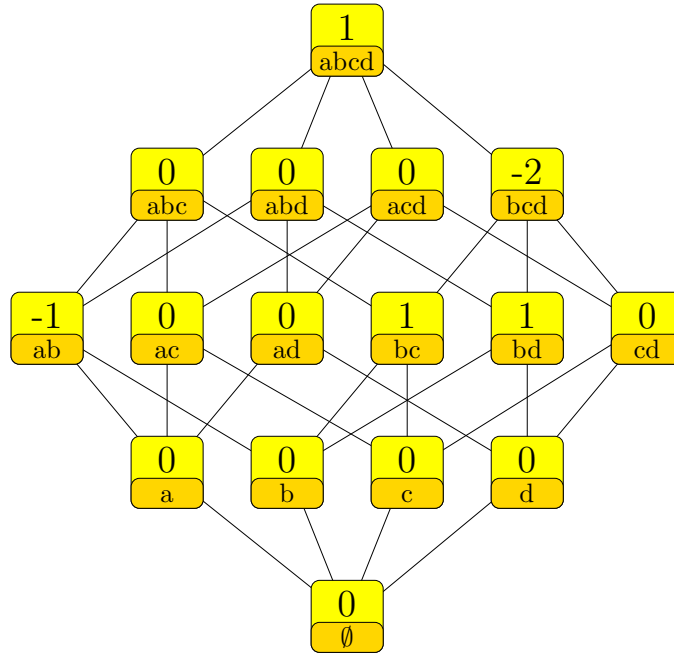
1.8.5.2 Differential inset (101)



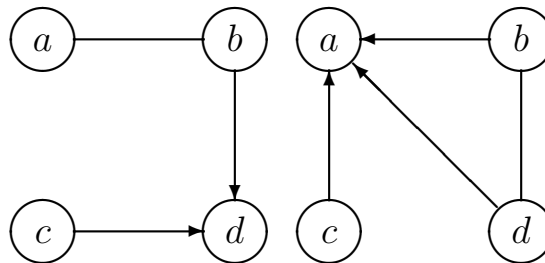
$$\begin{aligned}
 & \delta_{\{a\}} - 2\delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



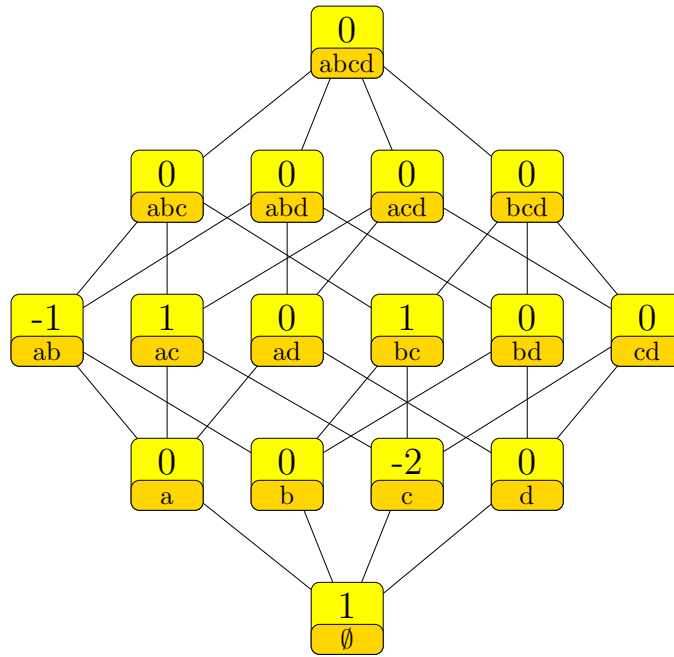
1.8.5.3 Differential inset (102)



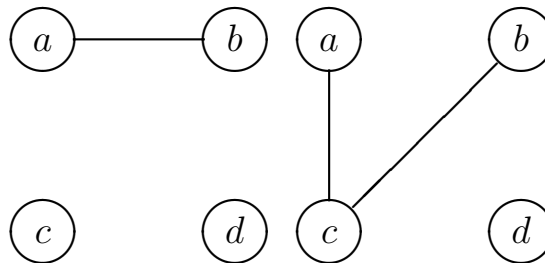
$$\begin{aligned}
 & -\delta_{\{a,b\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



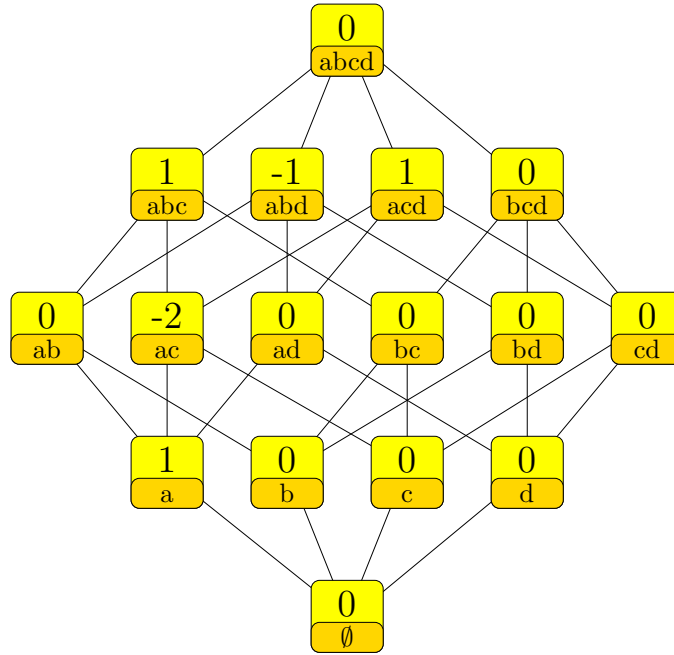
1.8.5.4 Differential inset (103)



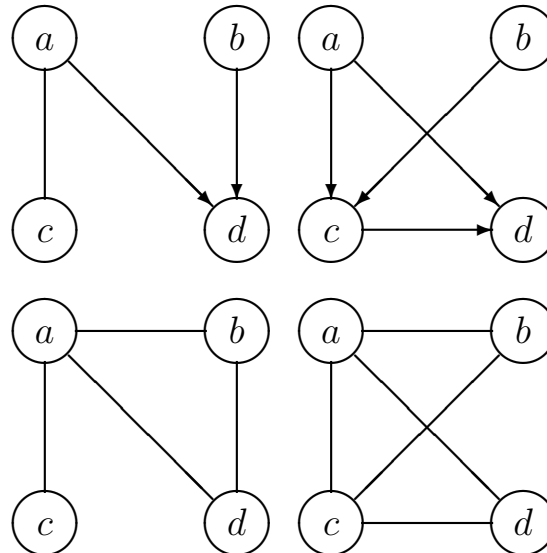
$$\begin{aligned}
 \delta_{\emptyset} - 2\delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|c \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



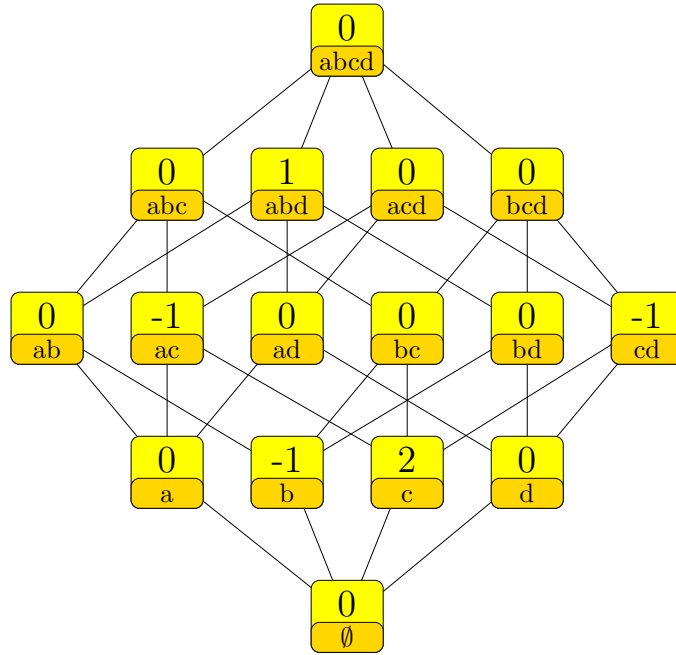
1.8.5.5 Differential inset (104)



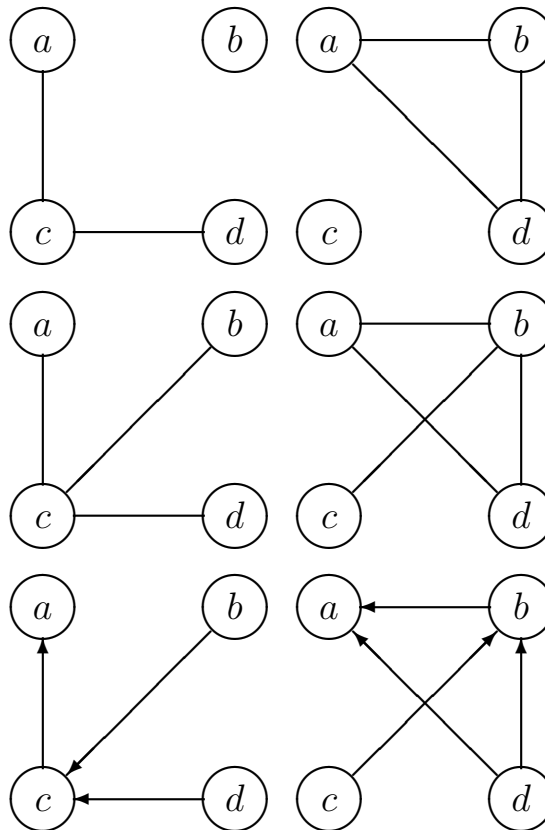
$$\begin{aligned}
 & \delta_{\{a\}} - 2\delta_{\{a,c\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle c,d|ab \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.8.5.6 Differential inset (105)

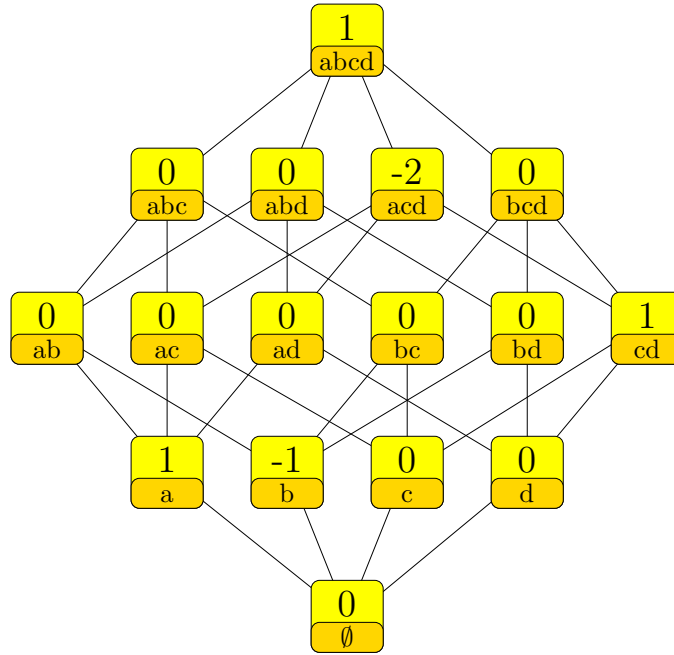


$$\begin{aligned}
 & -\delta_{\{b\}} + 2\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (+2\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

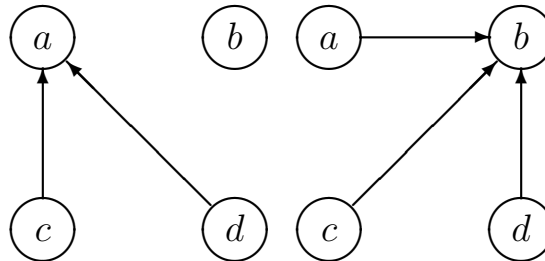




1.8.5.7 Differential inset (106)

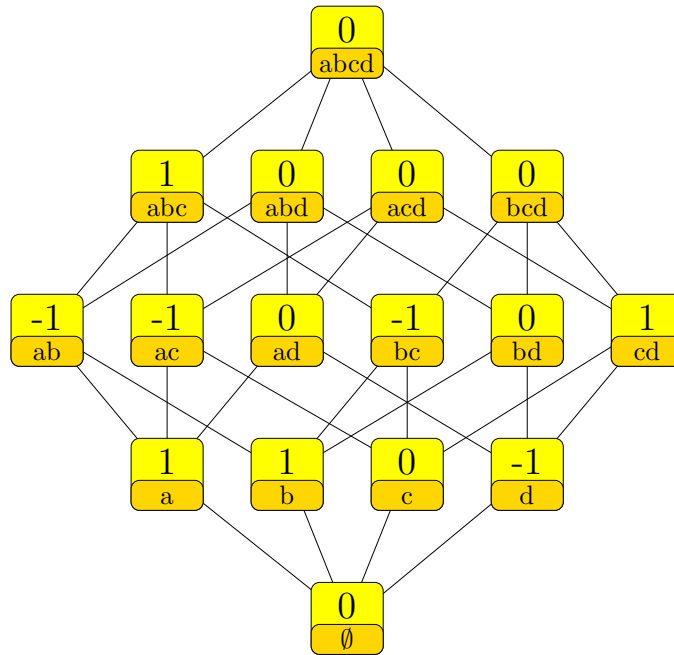


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c,d\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,d|c \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$

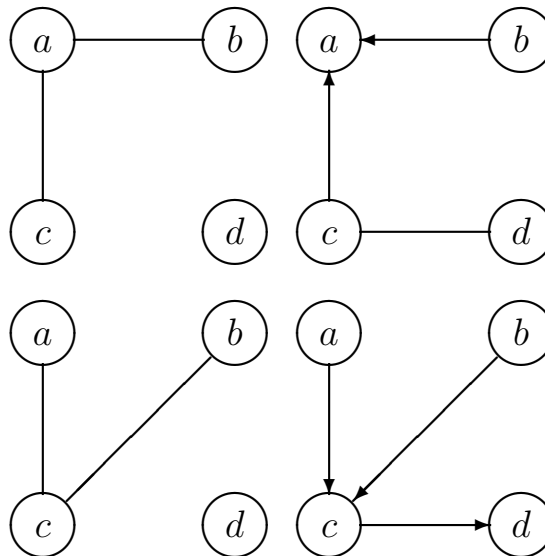


1.8.8 Number of nonzero values 8

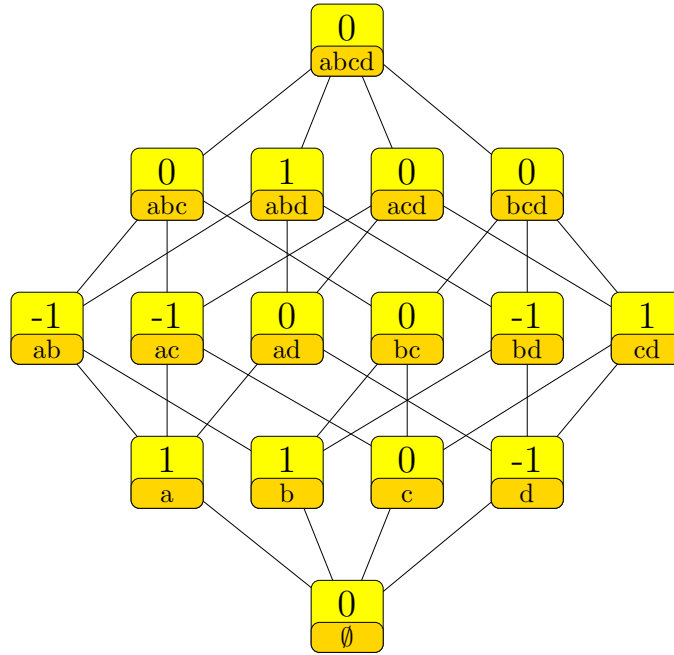
1.8.8.1 Differential inset (107)



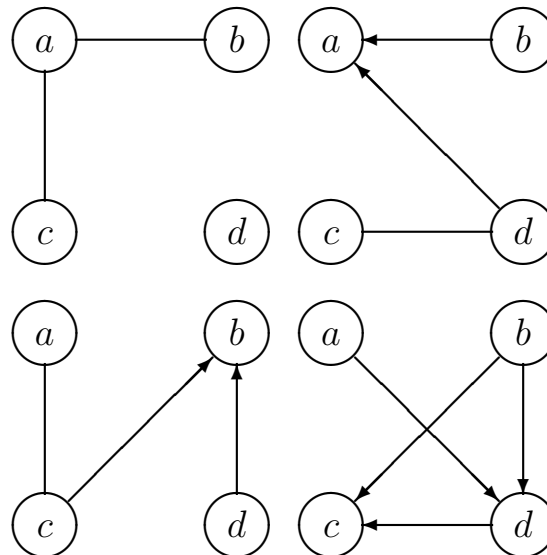
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



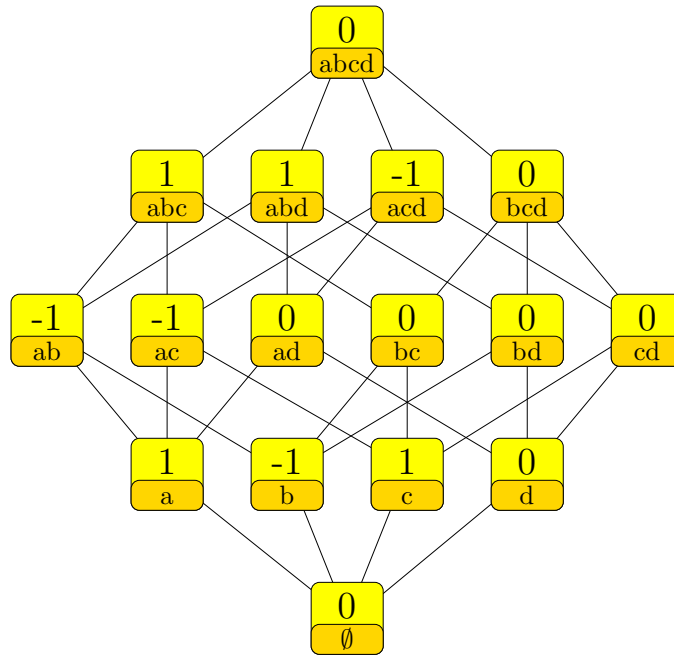
1.8.8.2 Differential inset (108)



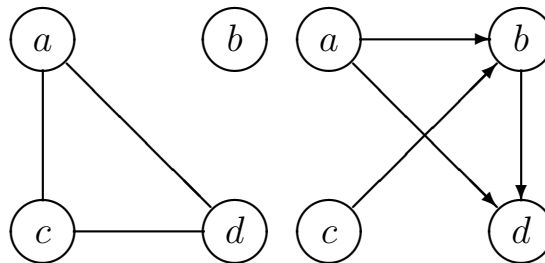
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



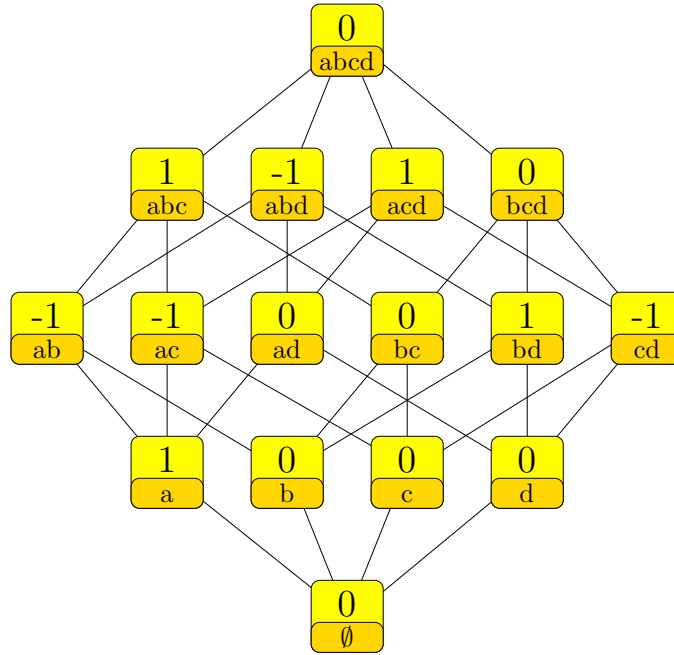
1.8.8.3 Differential inset (109)



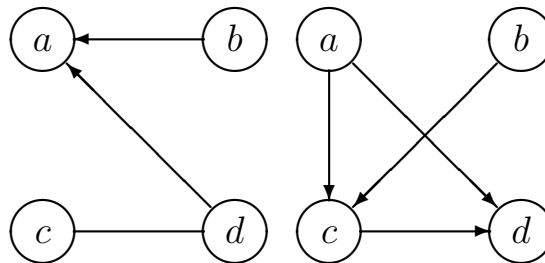
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



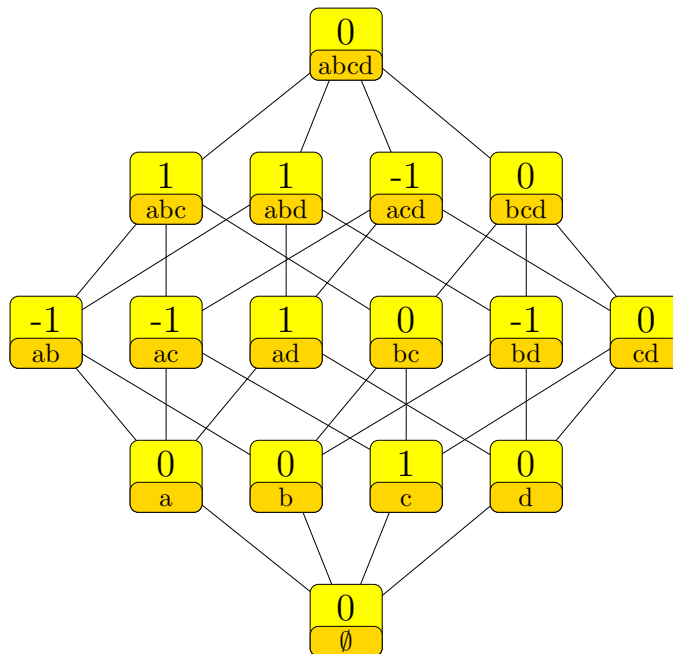
1.8.8.4 Differential inset (110)



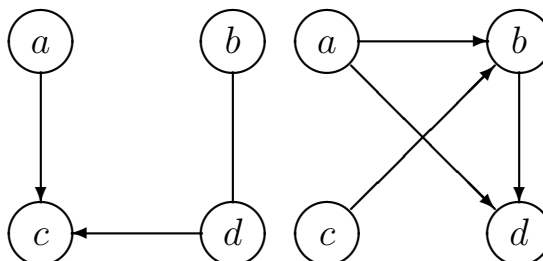
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|bd \rangle} - u_{\langle a,b|cd \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



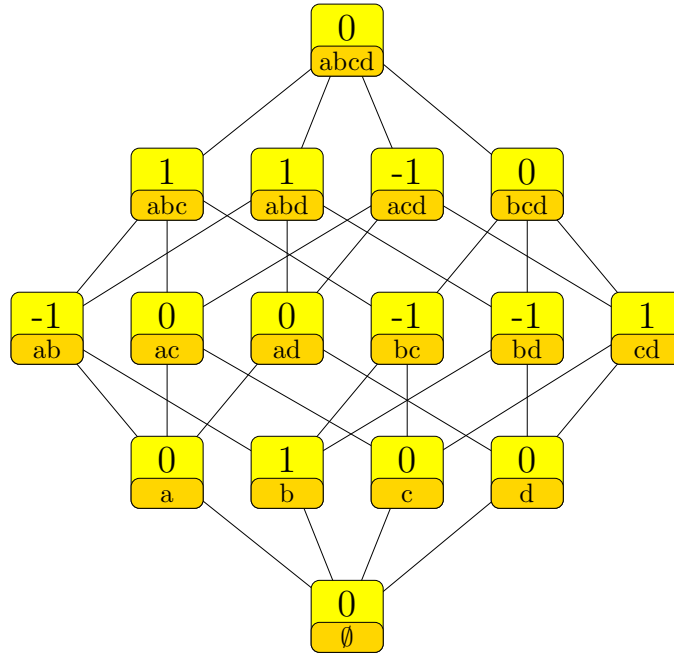
1.8.8.5 Differential inset (111)



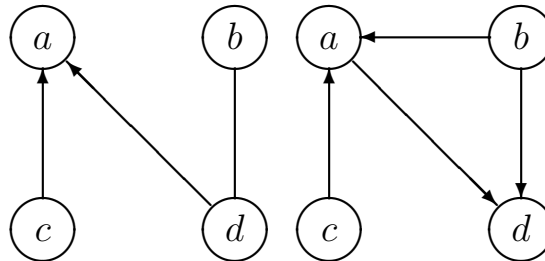
$$\begin{aligned}
 & \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



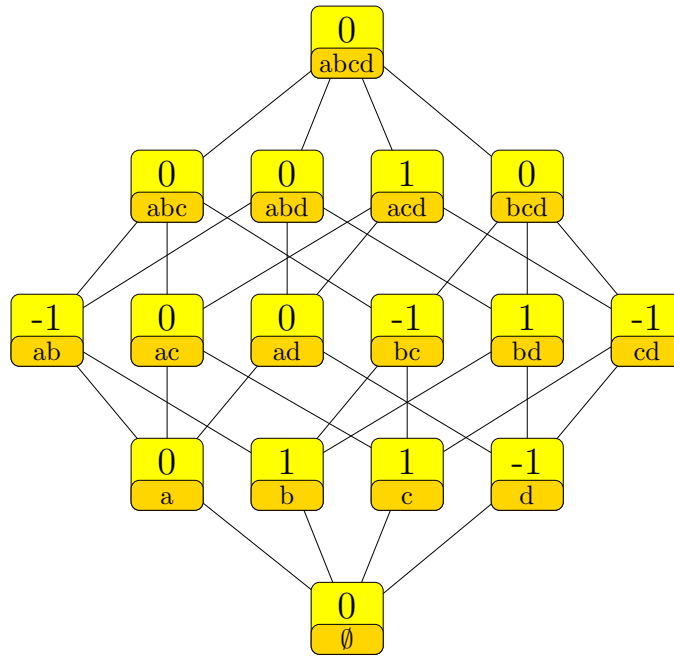
1.8.8.6 Differential inset (112)



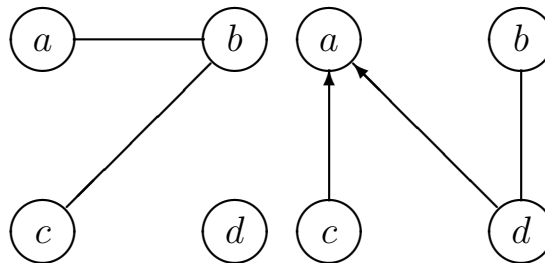
$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} + u_{\langle c,d|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.8.8.7 Differential inset (113)

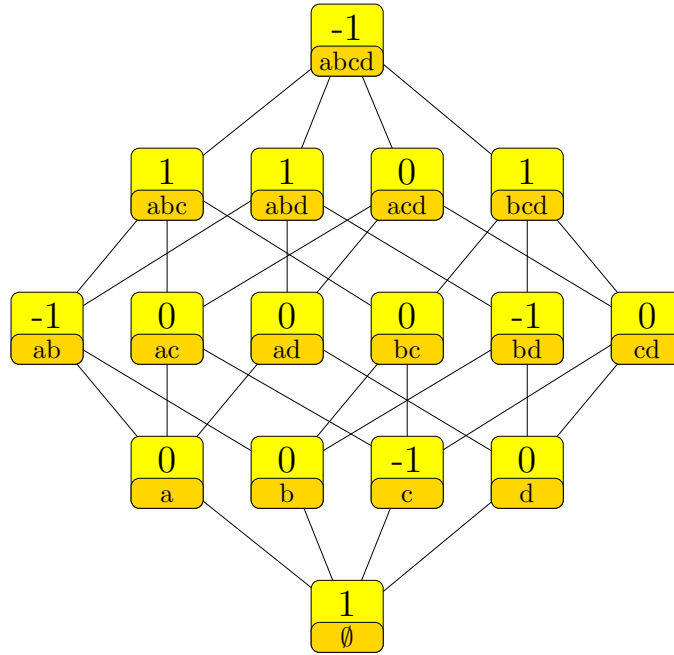


$$\begin{aligned}
 & \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

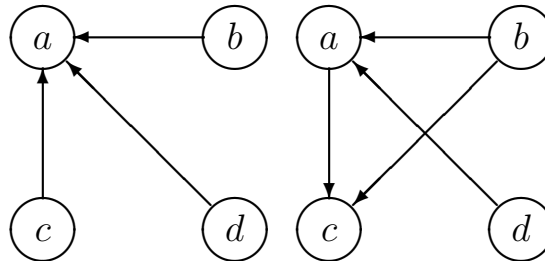




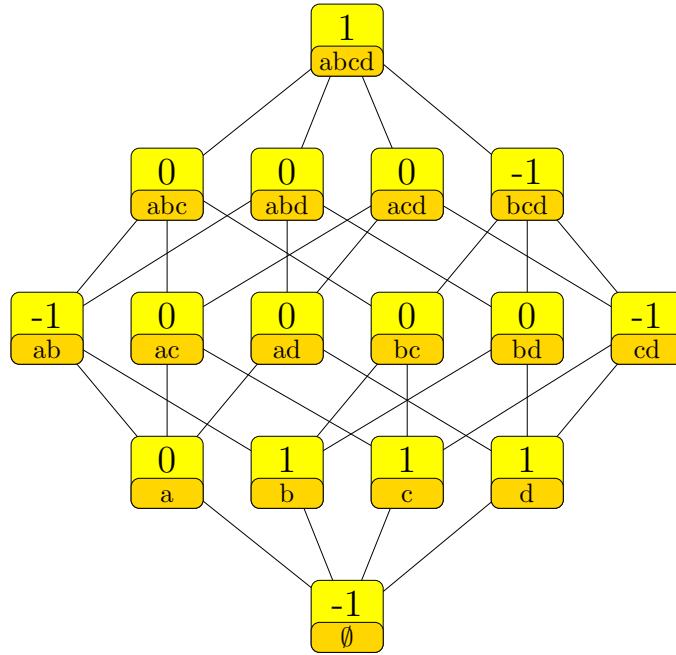
1.8.8.8 Differential inset (114)



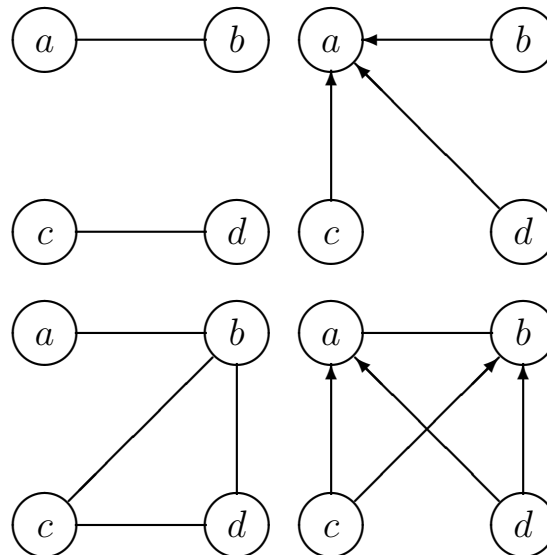
$$\begin{aligned}
 \delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



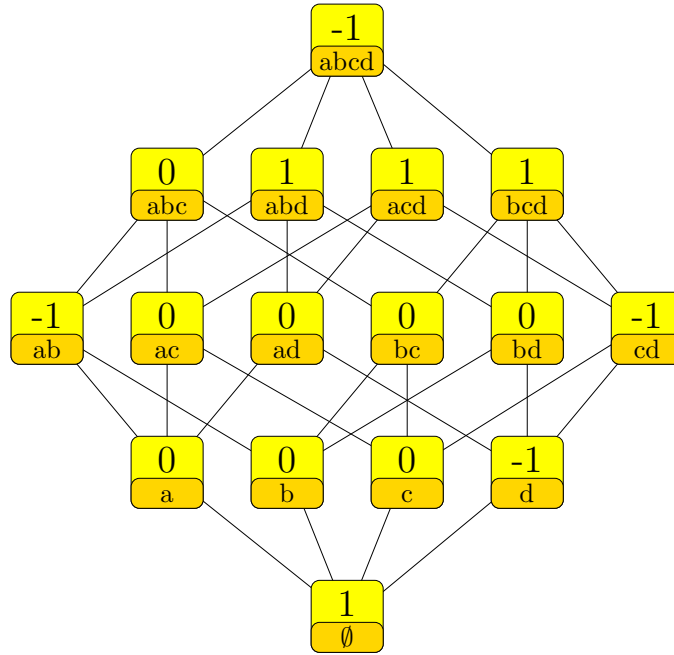
1.8.8.9 Differential inset (115)



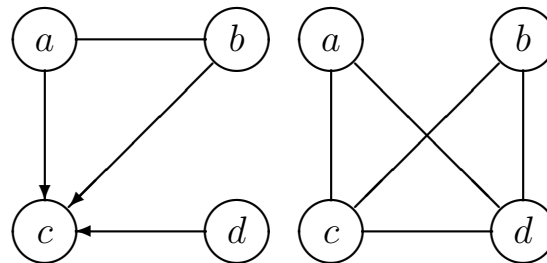
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle c,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}})
 \end{aligned}$$



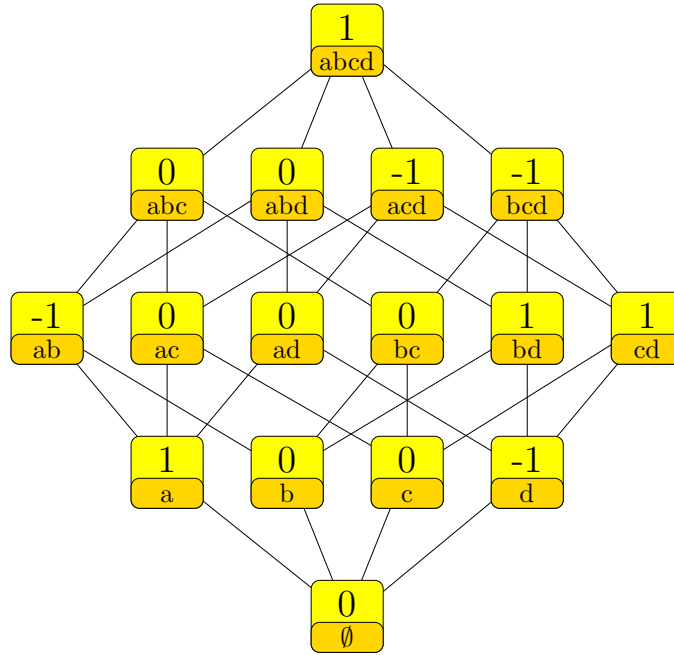
1.8.8.10 Differential imset (116)



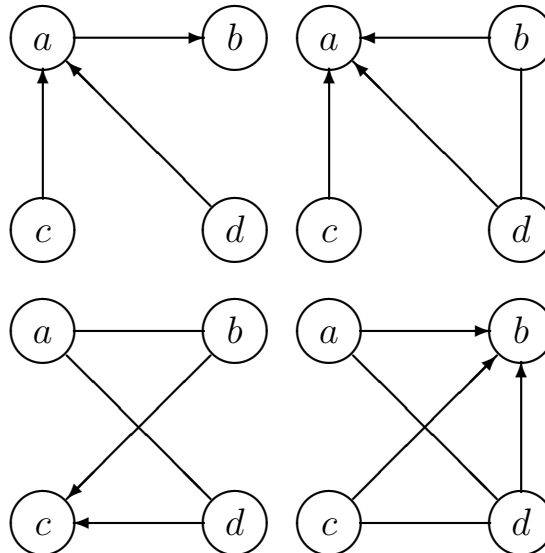
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle a,b|cd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



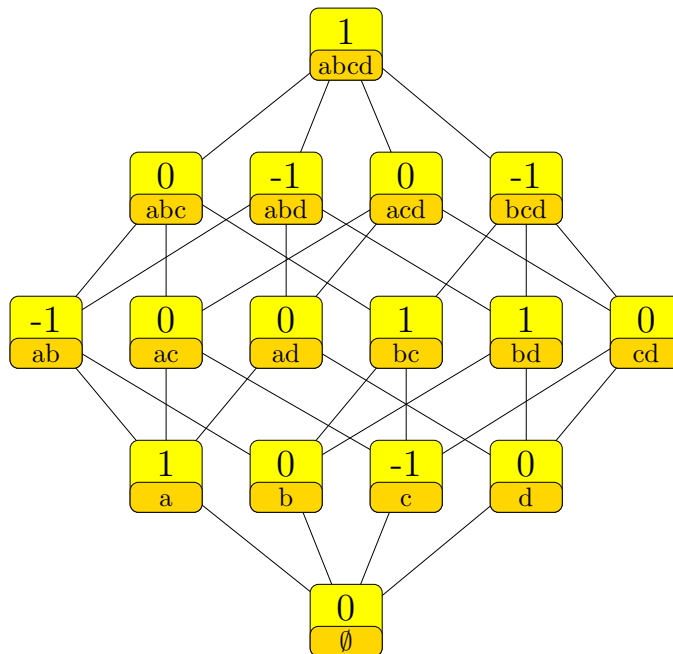
1.8.8.11 Differential imset (117)



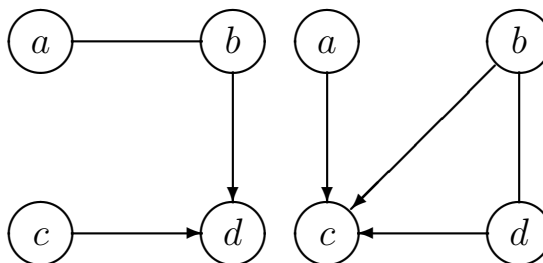
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



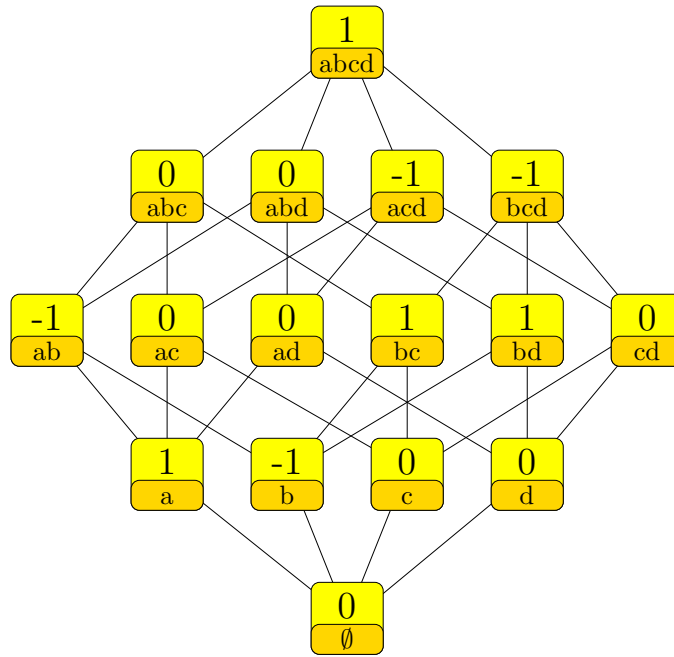
1.8.8.12 Differential imset (118)



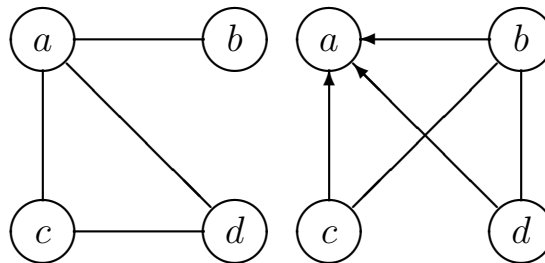
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



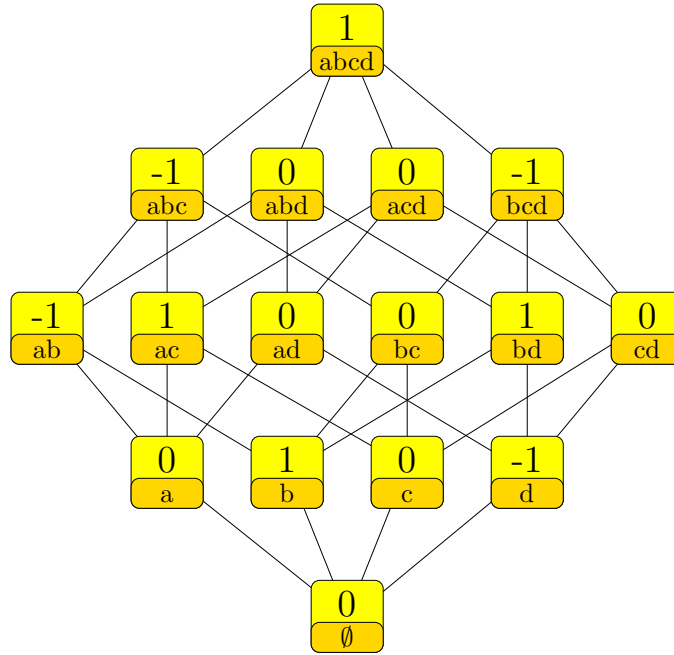
1.8.8.13 Differential imset (119)



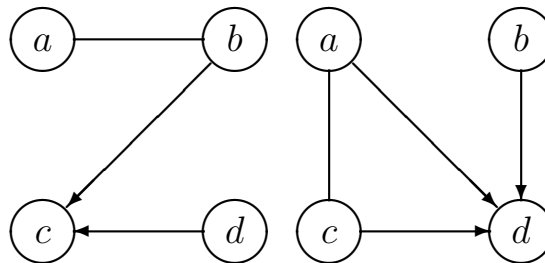
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



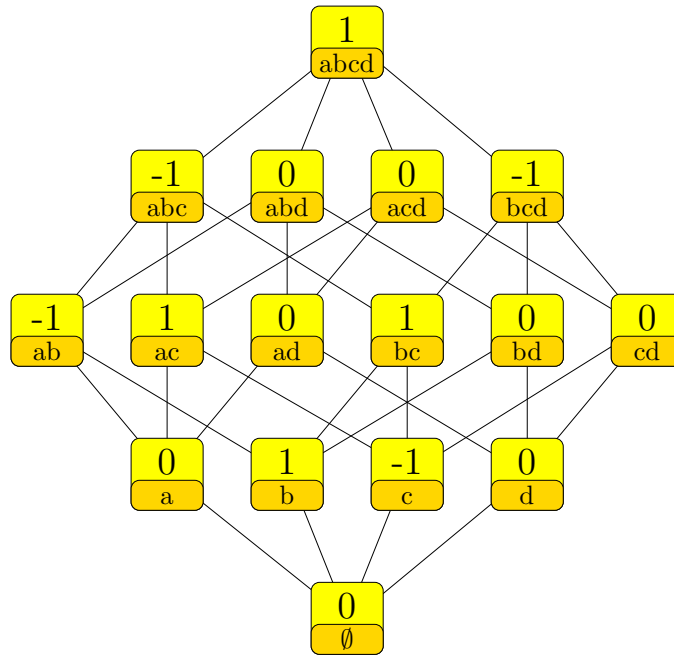
1.8.8.14 Differential imset (120)



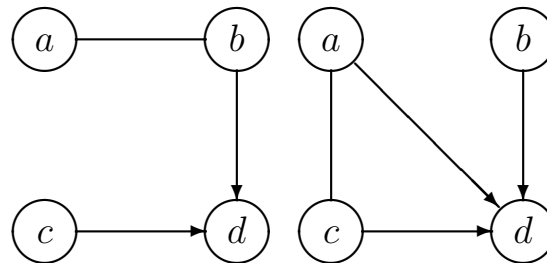
$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



1.8.8.15 Differential imset (121)

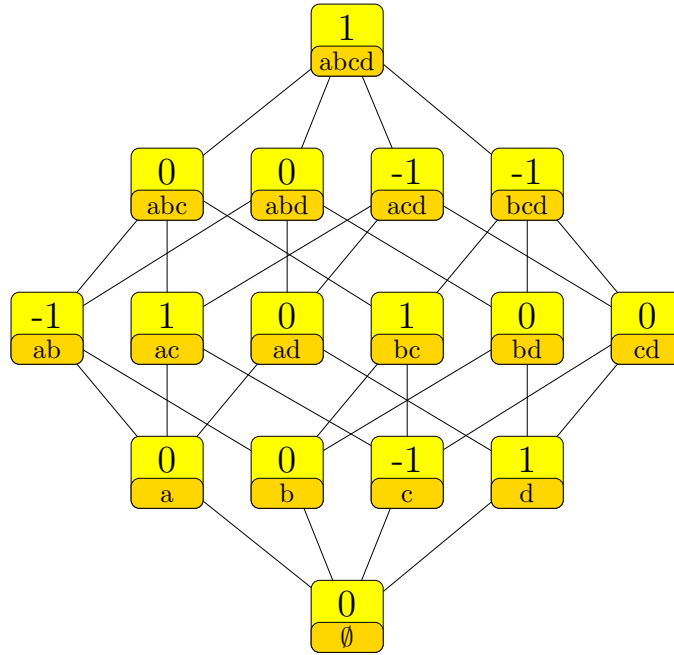


$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|bc \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$

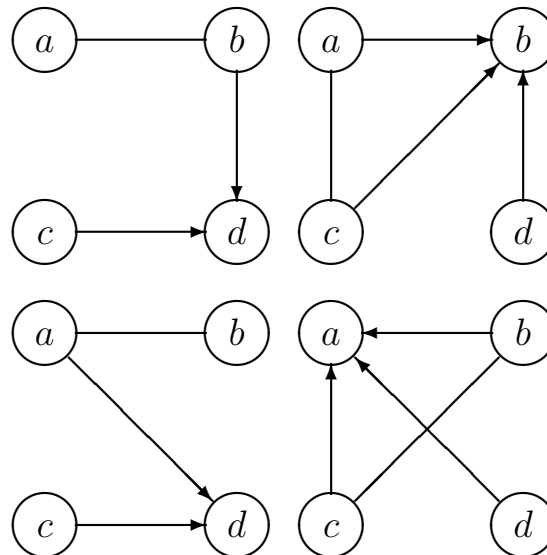




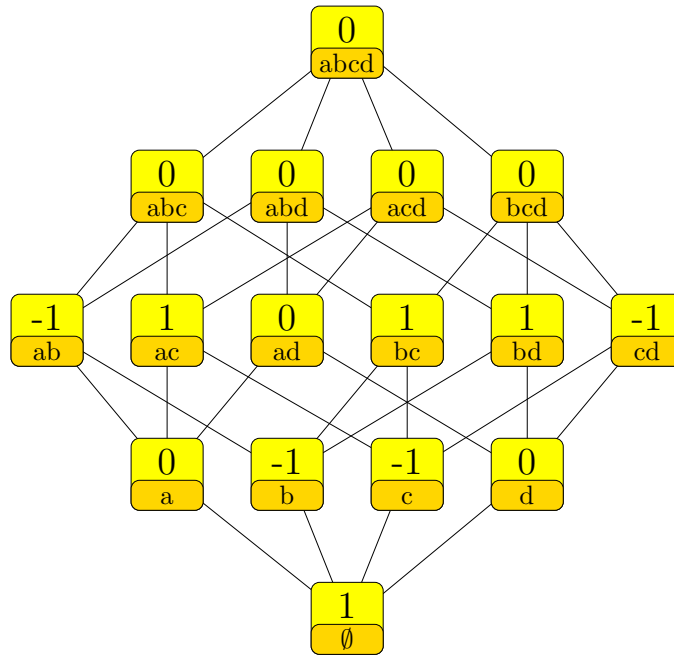
1.8.8.16 Differential imset (122)



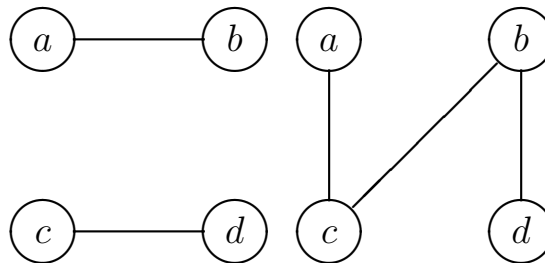
$$\begin{aligned}
 & -\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



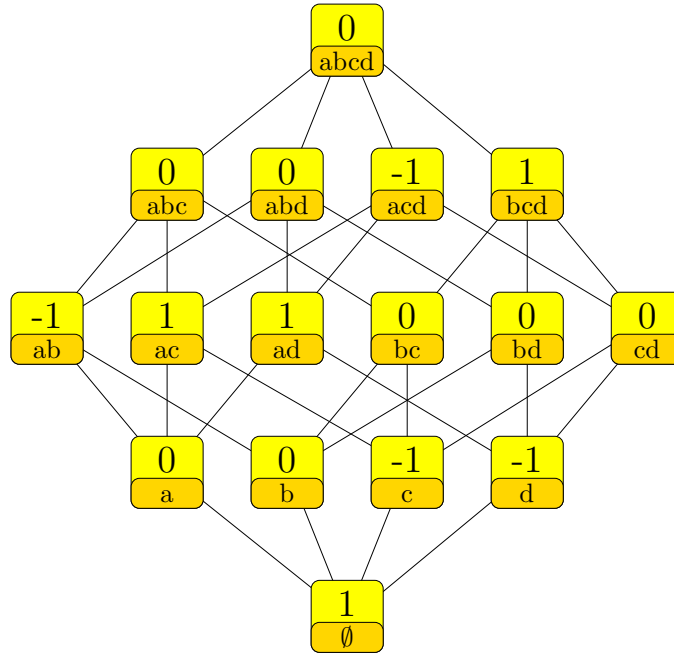
1.8.8.17 Differential imset (123)



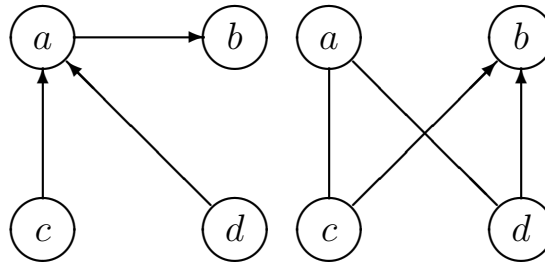
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



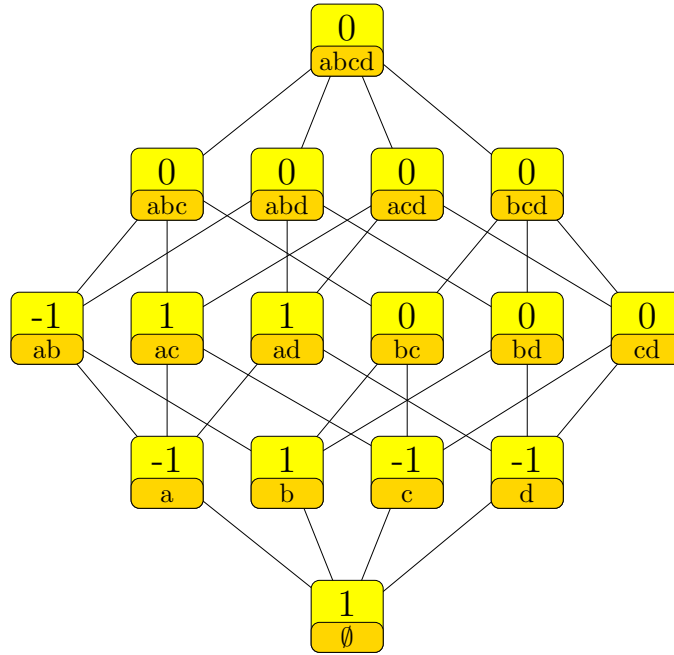
1.8.8.18 Differential imset (124)



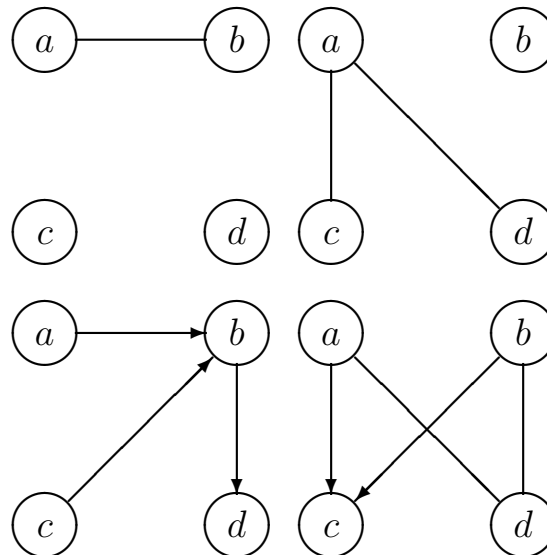
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,b|cd \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|a \rangle} \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



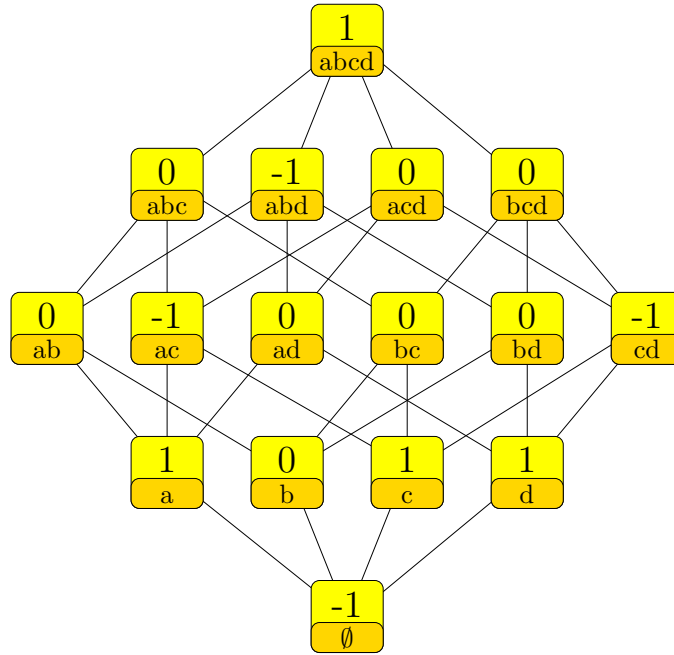
1.8.8.19 Differential imset (125)



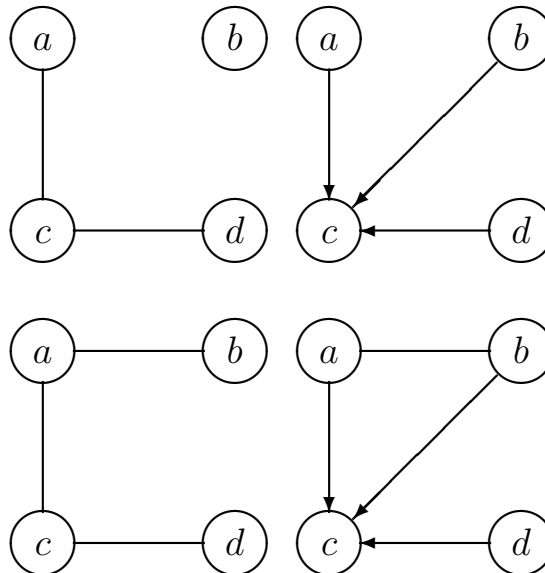
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

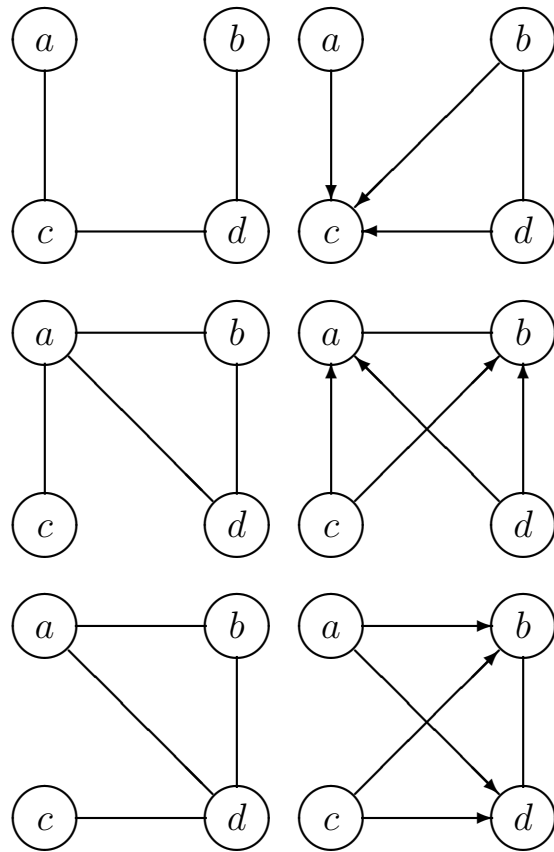


1.8.8.20 Differential imset (126)

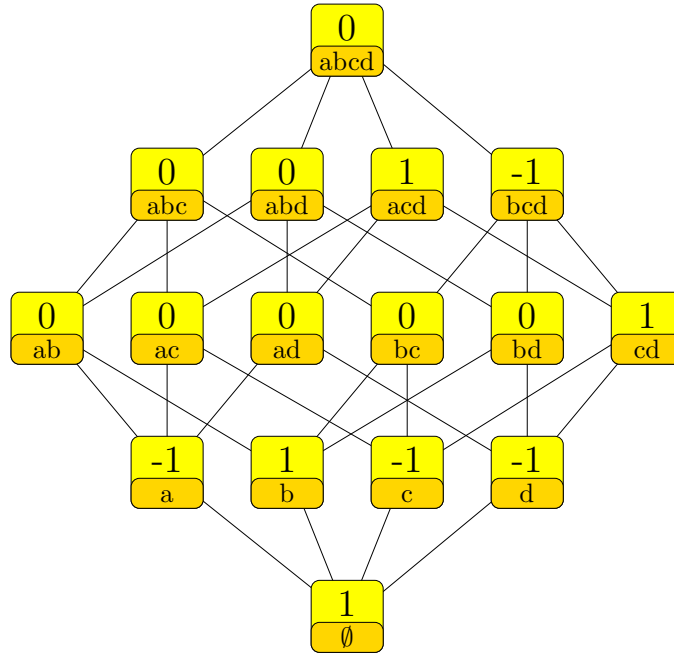


$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}}) \\
 &= (\delta_{\{d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}})
 \end{aligned}$$

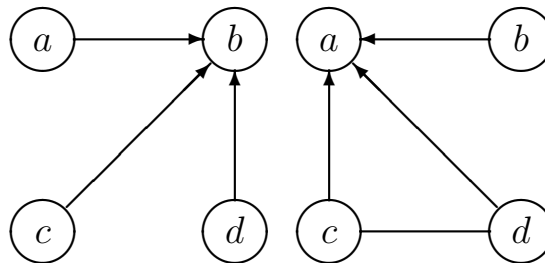




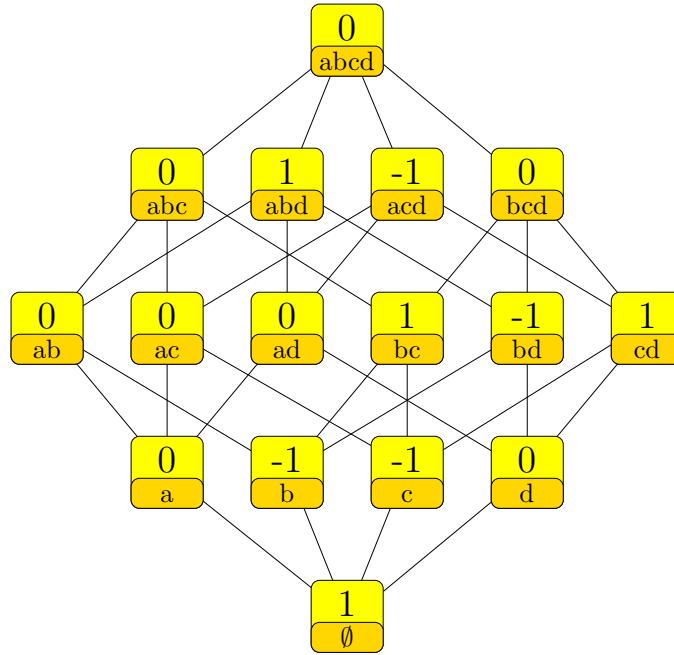
1.8.8.21 Differential imset (127)



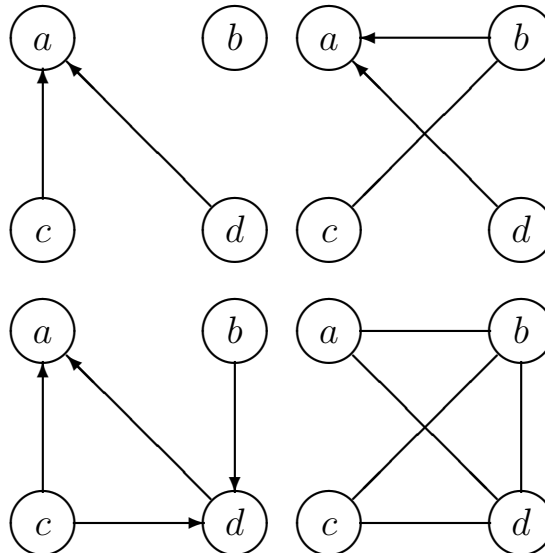
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|a \rangle} - u_{\langle b,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



1.8.8.22 Differential imset (128)

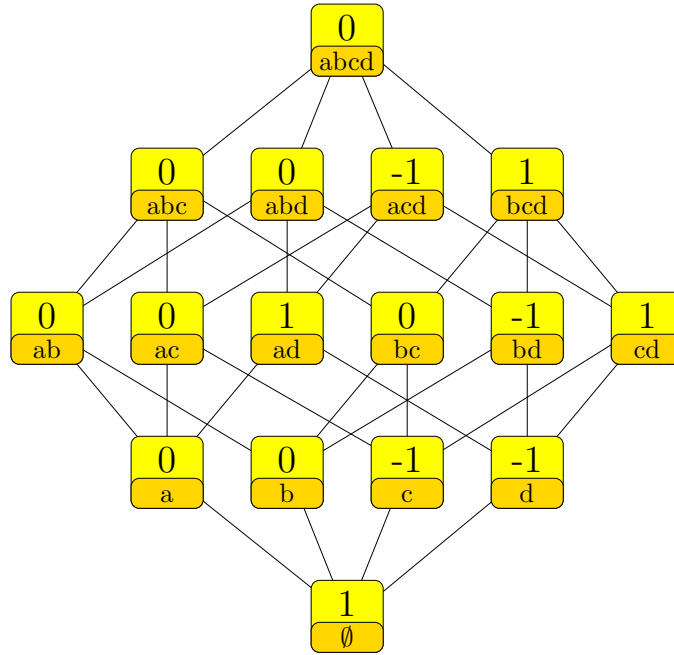


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

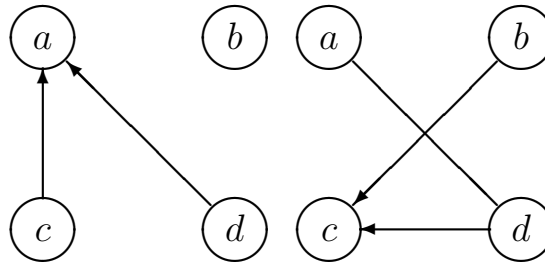




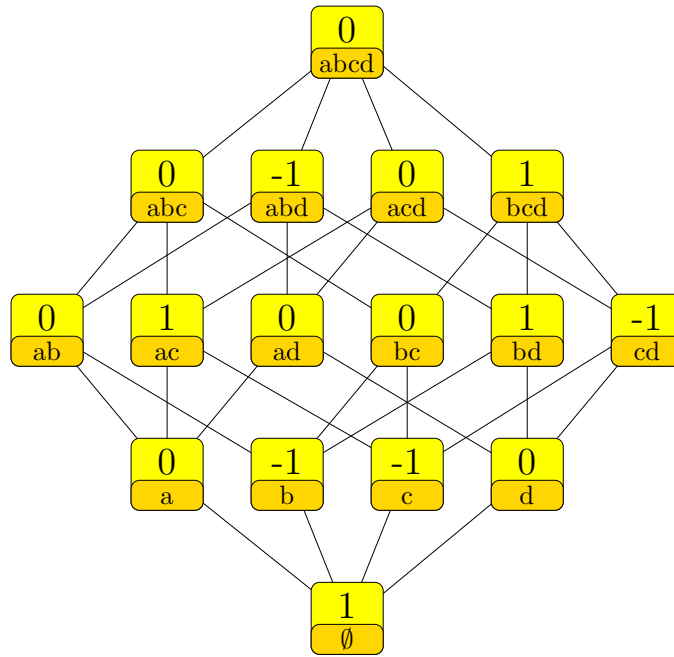
1.8.8.23 Differential imset (129)



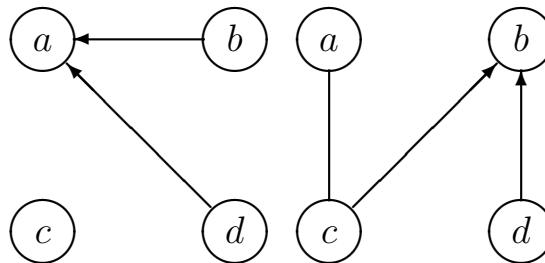
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} - u_{\langle a,c|d \rangle} + u_{\langle c,d|b \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



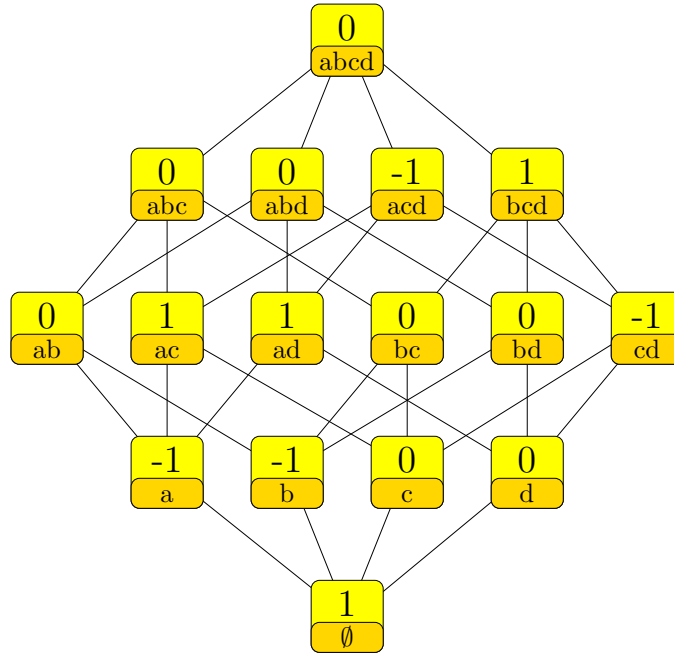
1.8.8.24 Differential imset (130)



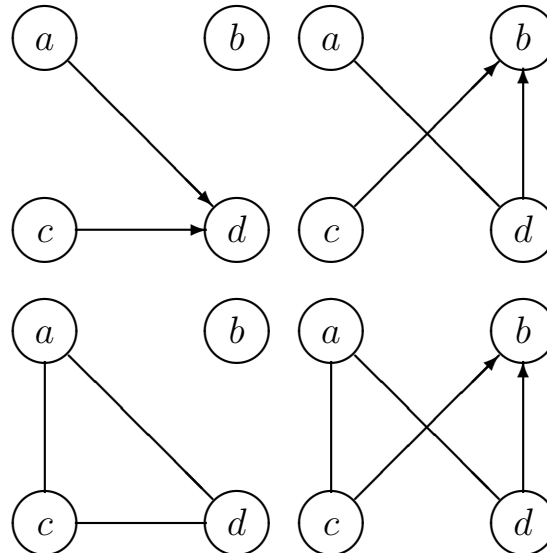
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle a,d|b \rangle} + u_{\langle b,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



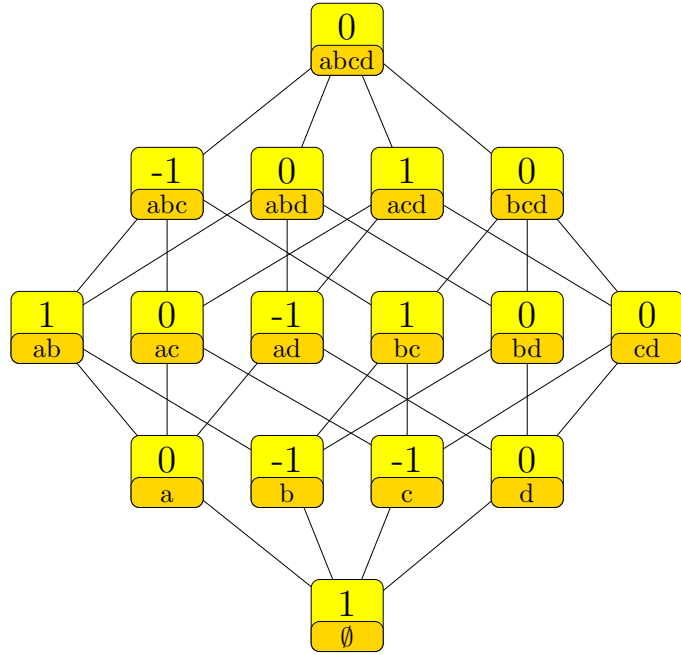
1.8.8.25 Differential imset (131)



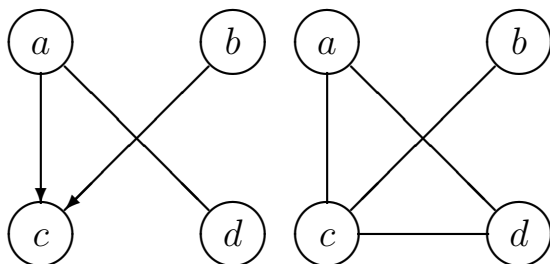
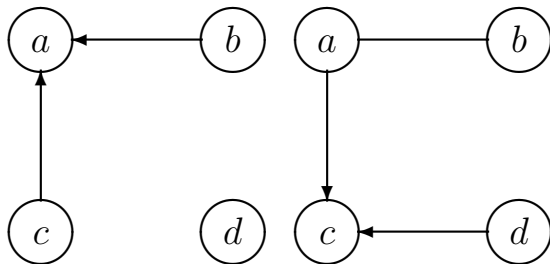
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|a \rangle} + u_{\langle b,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

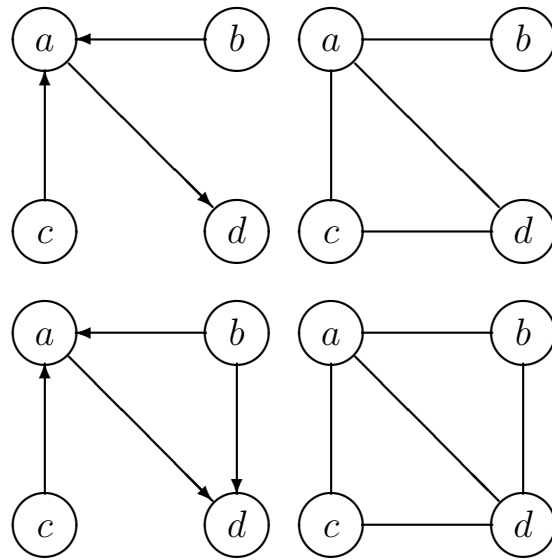


1.8.8.26 Differential imset (132)



$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle a,c|b \rangle} + u_{\langle c,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

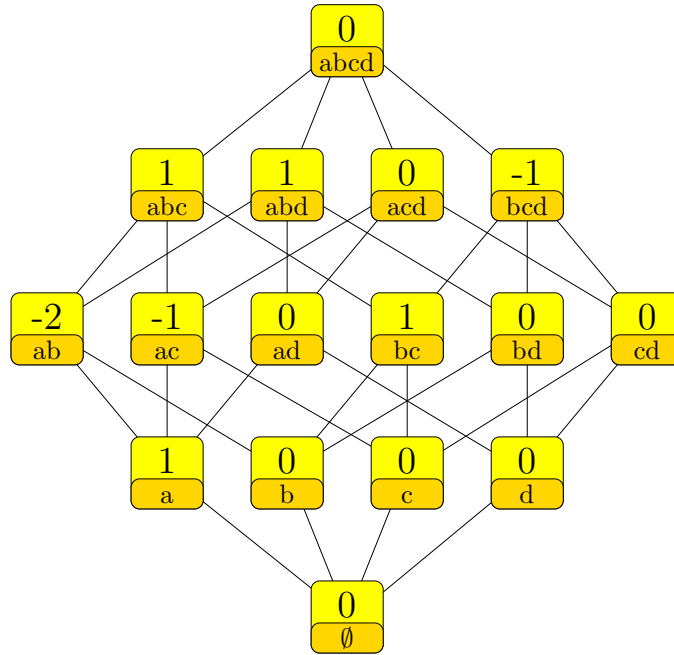




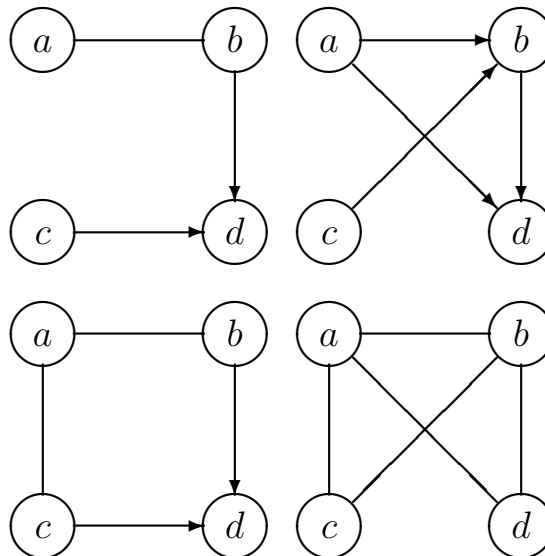
### 1.10 Squared Euclidean length 10

#### 1.10.7 Number of nonzero values 7

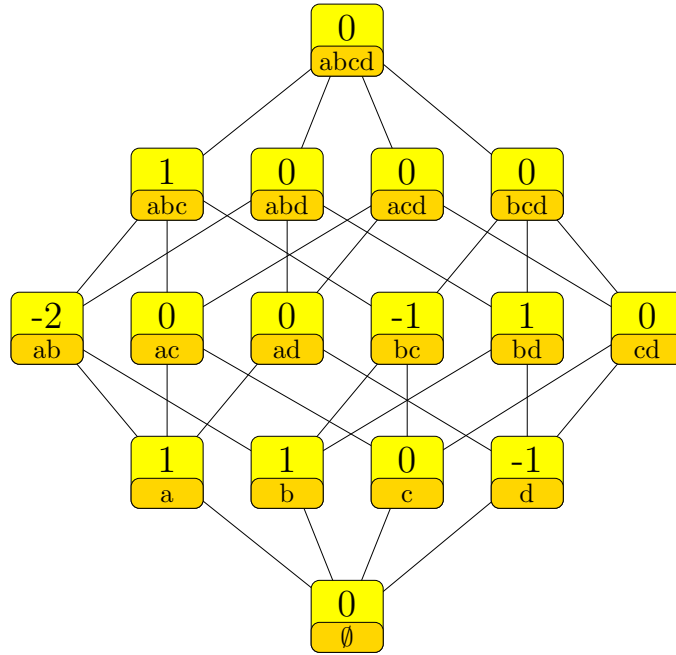
##### 1.10.7.1 Differential imset (133)



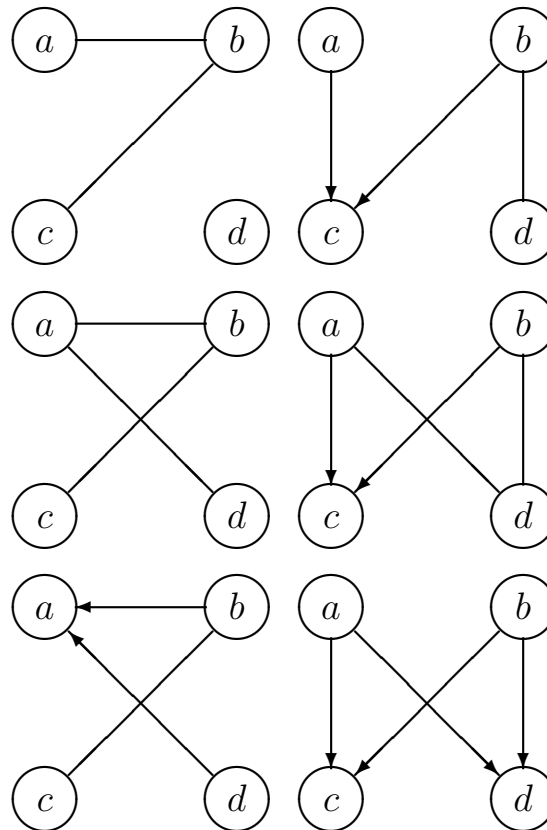
$$\begin{aligned}
 & \delta_{\{a\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



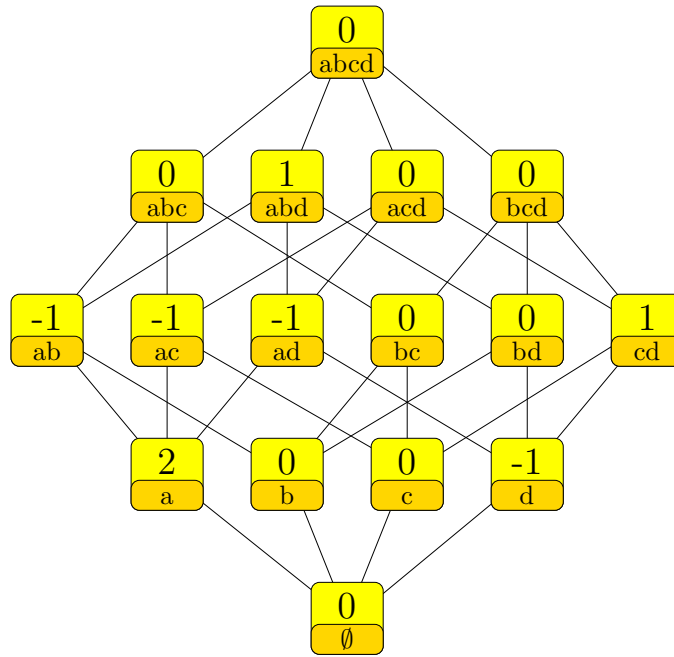
1.10.7.2 Differential imset (134)



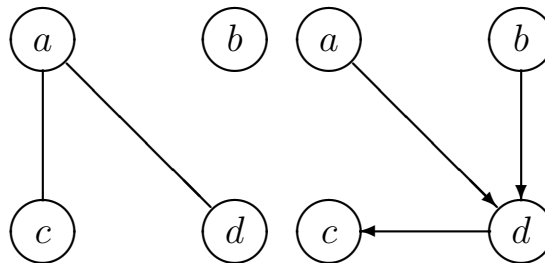
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{a,b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.10.7.3 Differential imset (135)

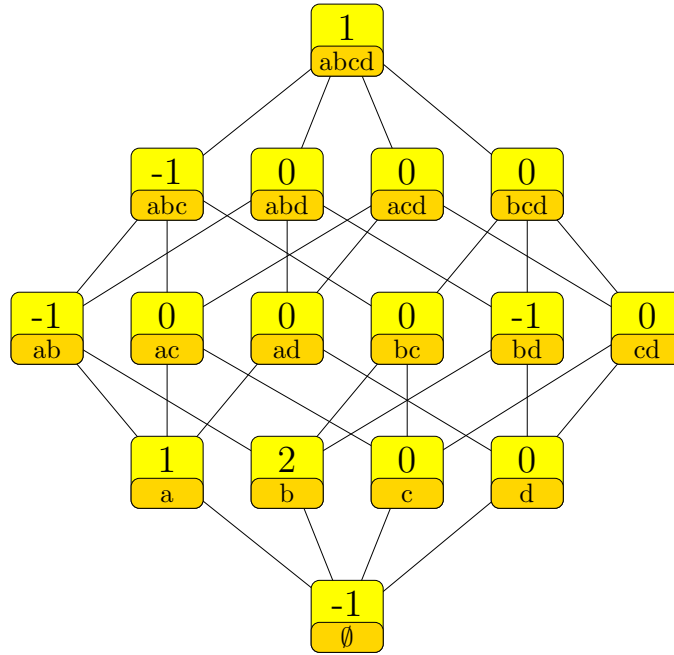


$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,c|\emptyset\rangle} + u_{\langle c,d|\emptyset\rangle} + u_{\langle b,d|a\rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

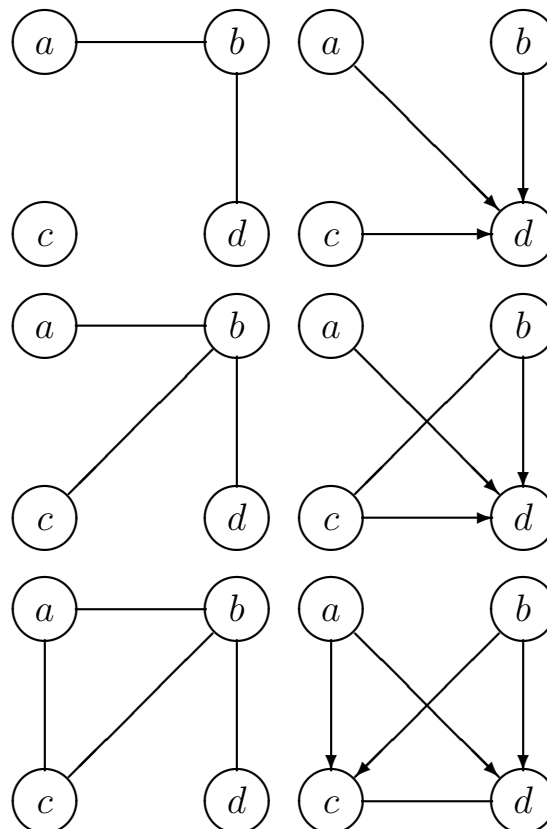




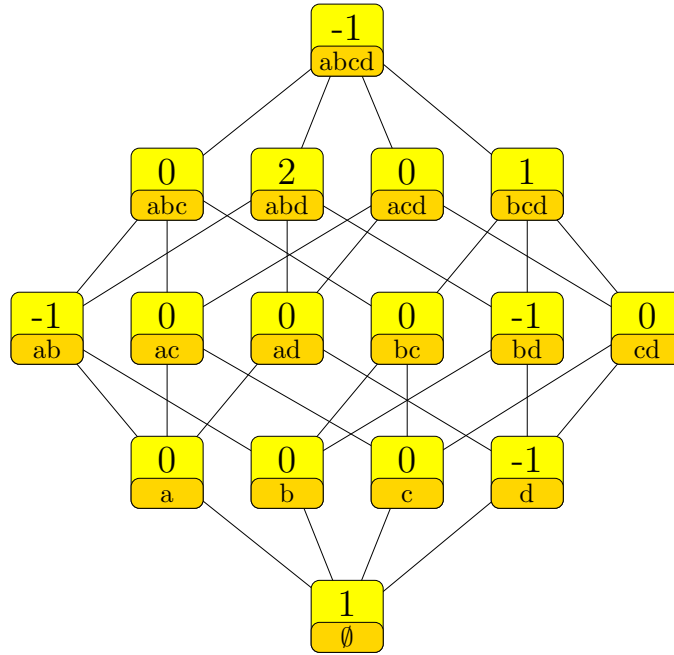
1.10.7.4 Differential imset (136)



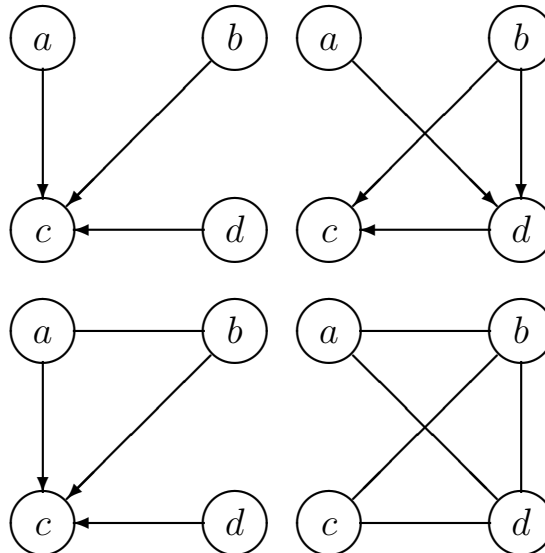
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 2\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &= (+2\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}}) \\
 &= (\delta_{\{b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$



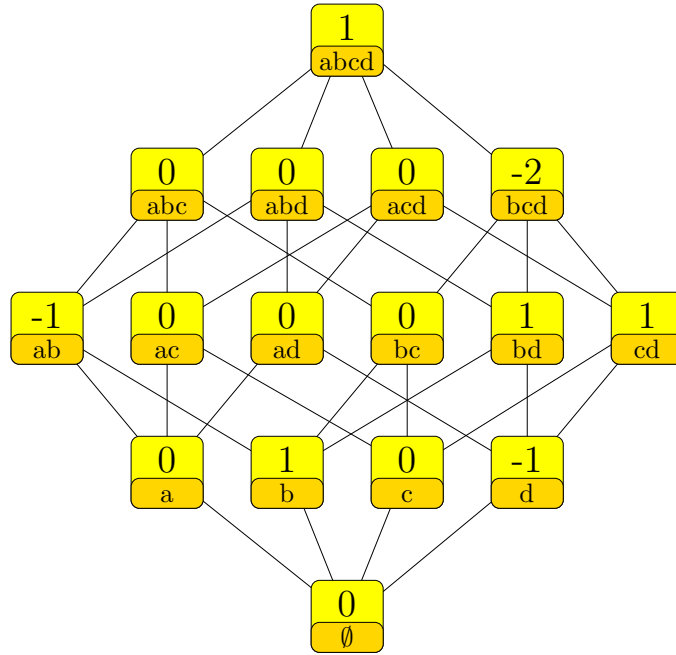
1.10.7.5 Differential imset (137)



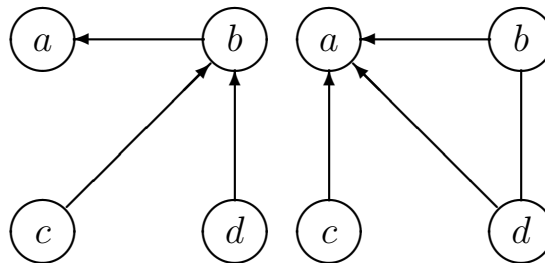
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + 2\delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



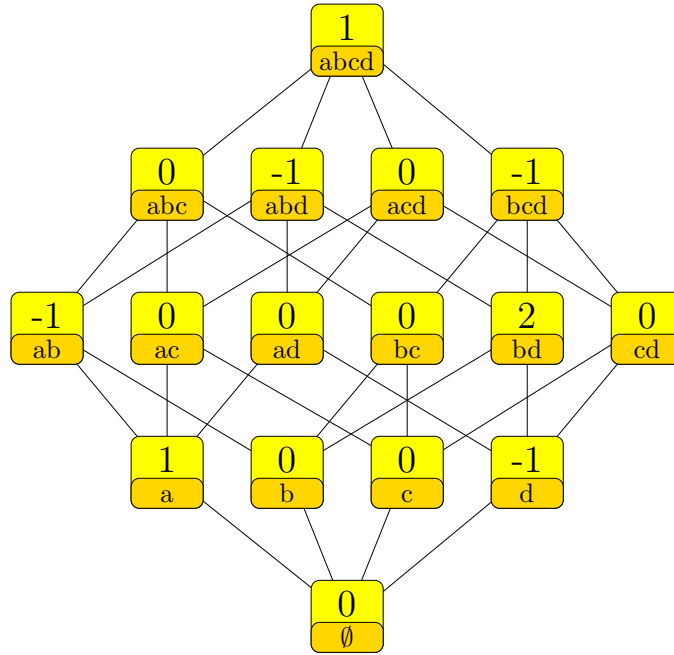
1.10.7.6 Differential imset (138)



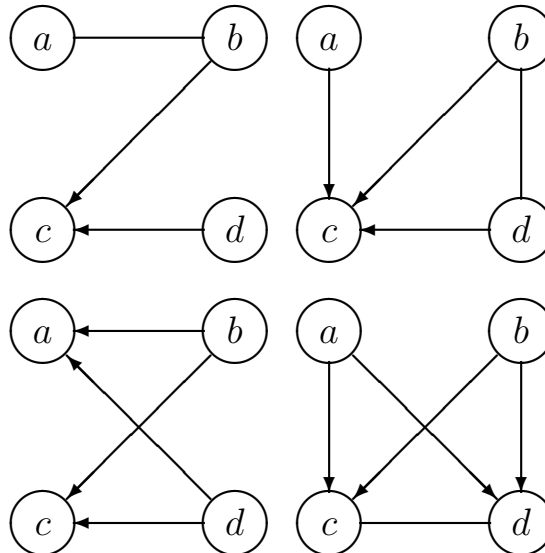
$$\begin{aligned}
 & \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



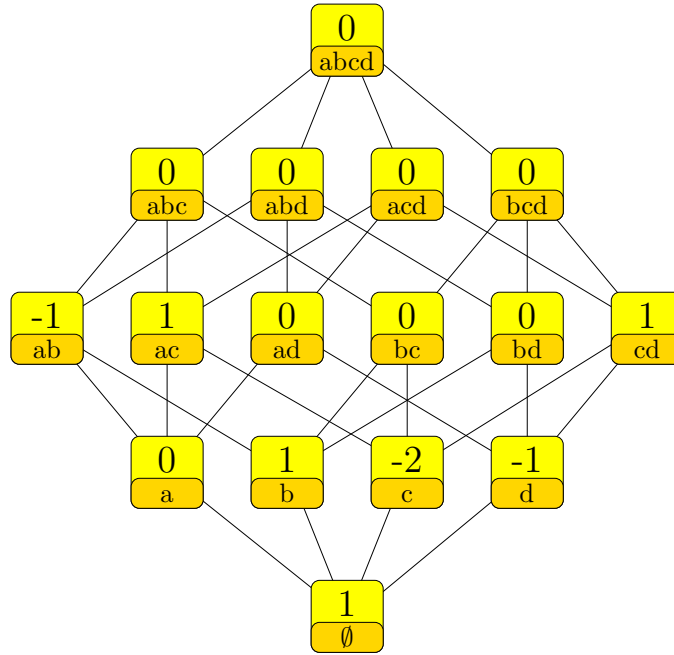
1.10.7.7 Differential imset (139)



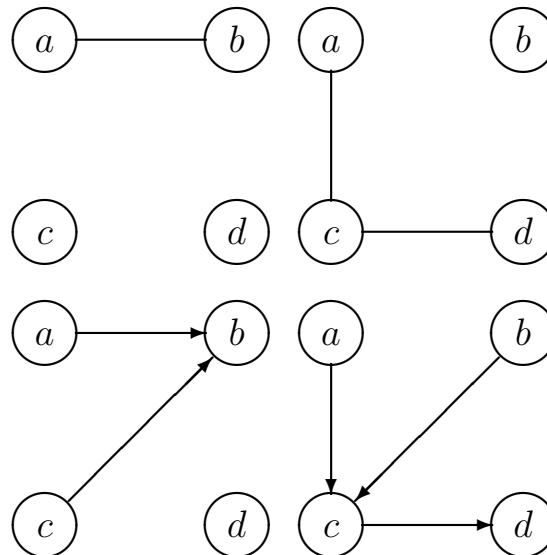
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + 2\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + 2\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$



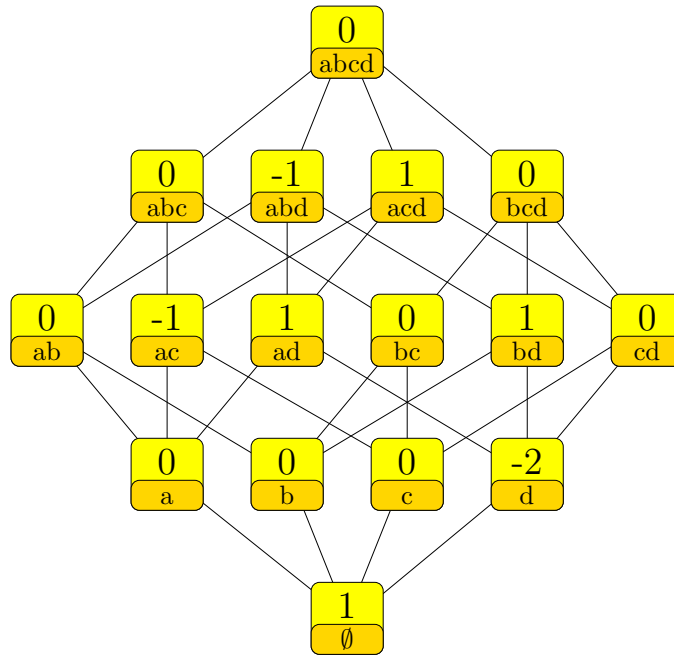
1.10.7.8 Differential imset (140)



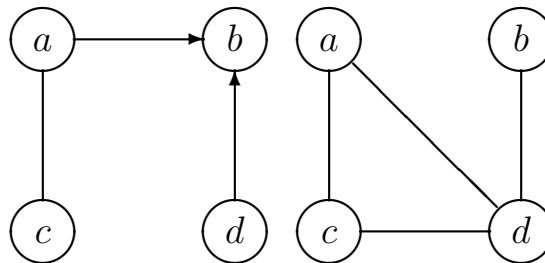
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



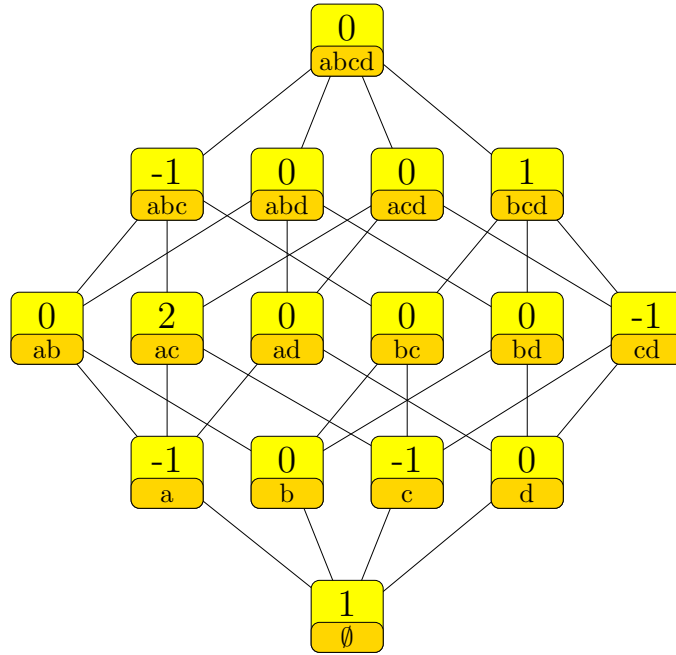
1.10.7.9 Differential imset (141)



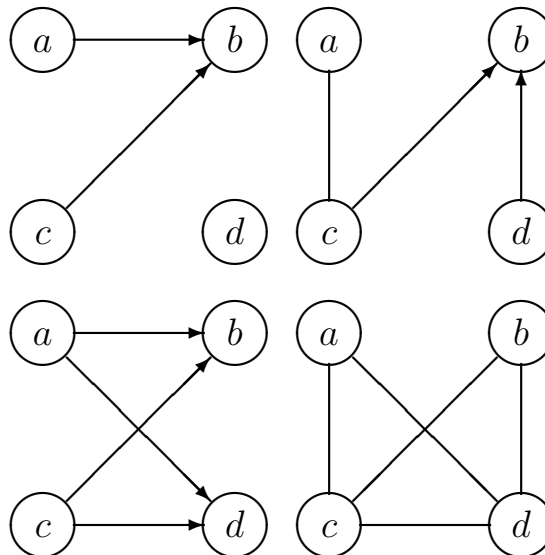
$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.10.7.10 Differential imset (142)

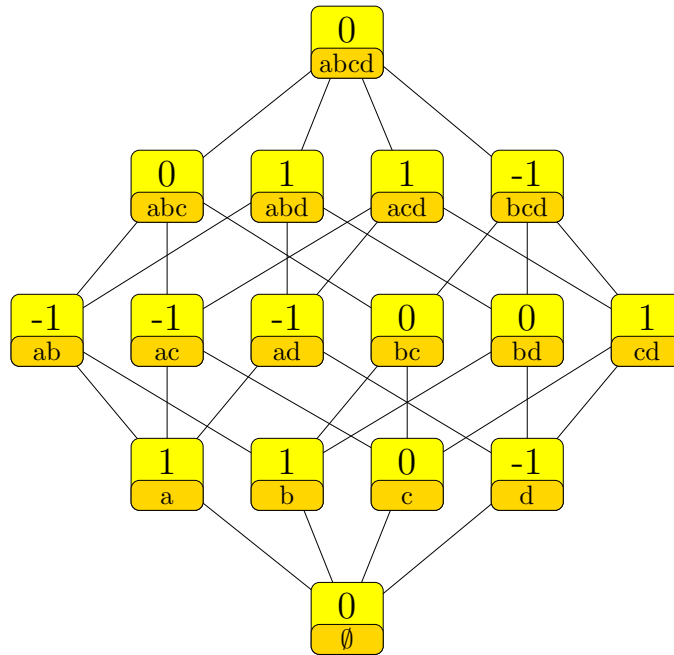


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + 2\delta_{\{a,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,b|cd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + 2\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

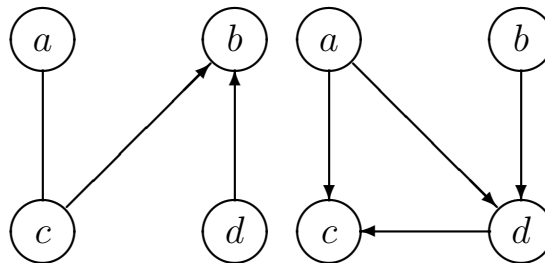


1.10.10 Number of nonzero values 10

1.10.10.1 Differential imset (143)

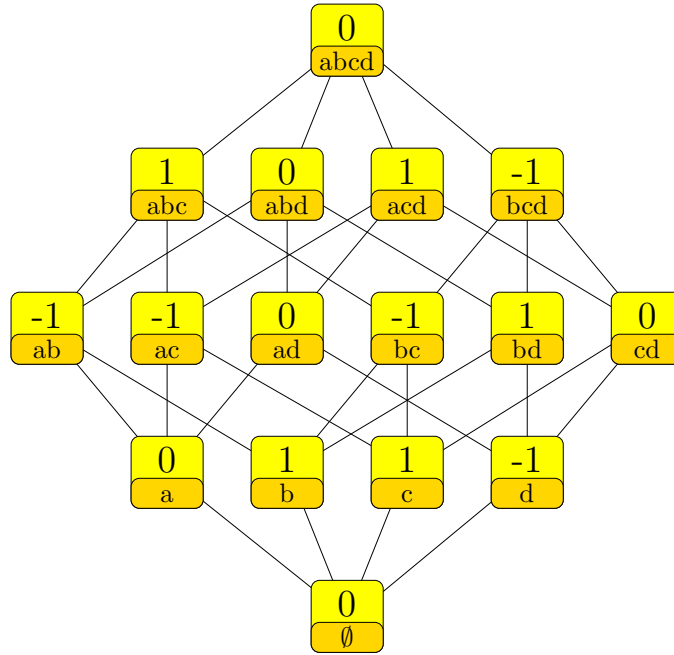


$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|b \rangle} + u_{\langle c,d|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

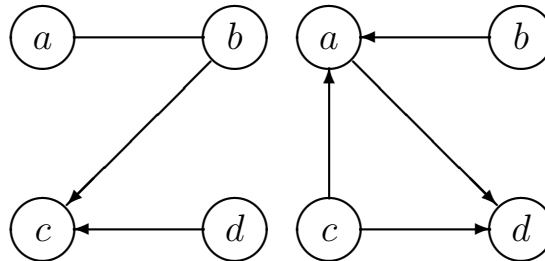




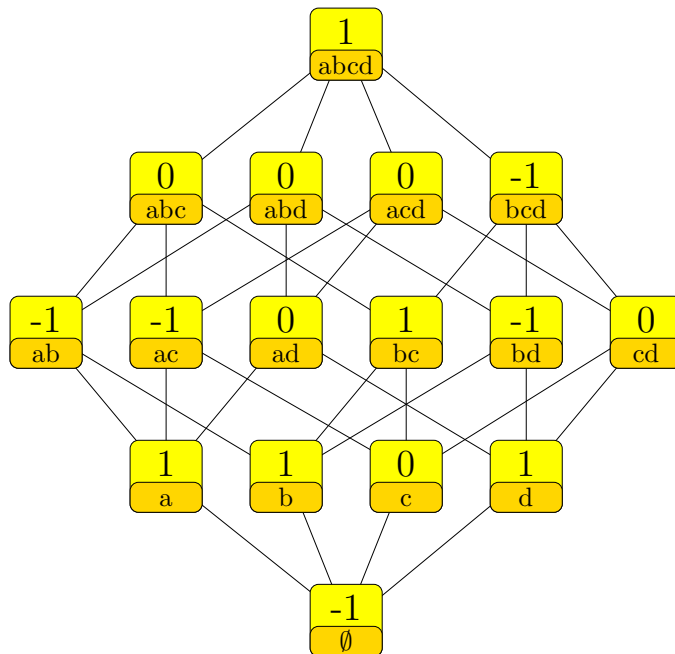
1.10.10.2 Differential imset (144)



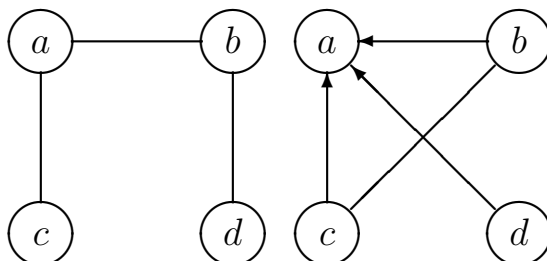
$$\begin{aligned}
 & \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|b \rangle} + u_{\langle a,d|c \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



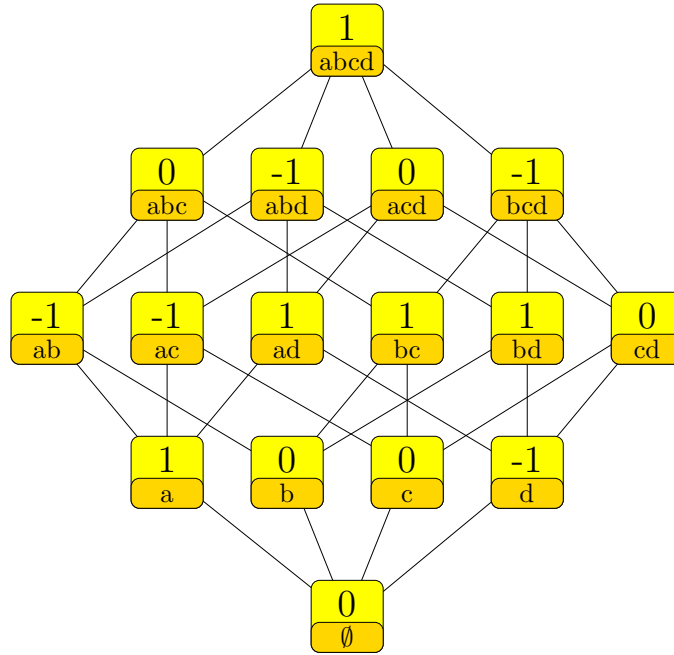
1.10.10.3 Differential imset (145)



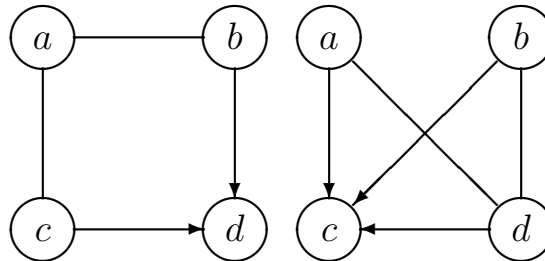
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



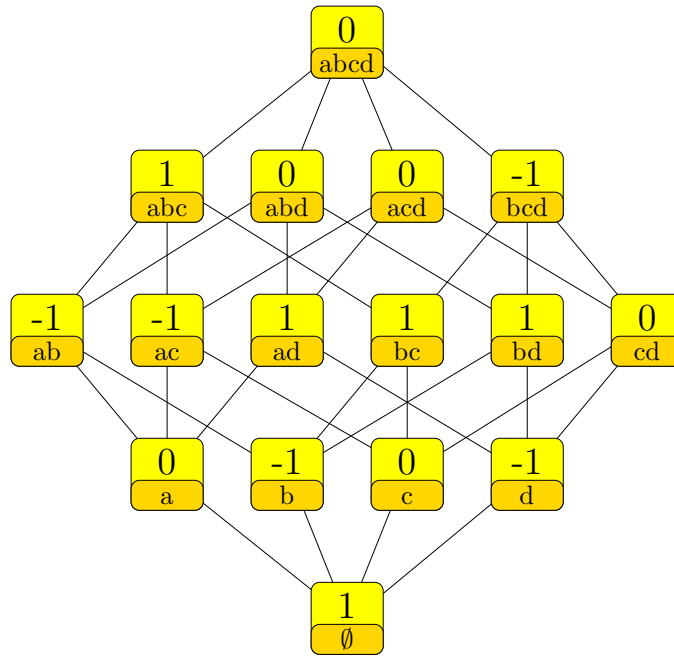
1.10.10.4 Differential imset (146)



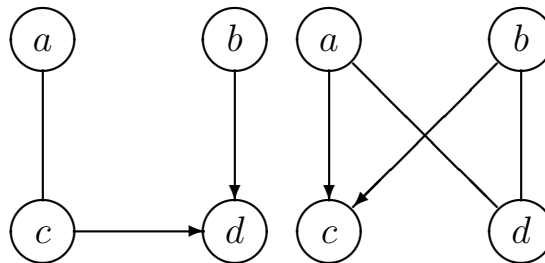
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



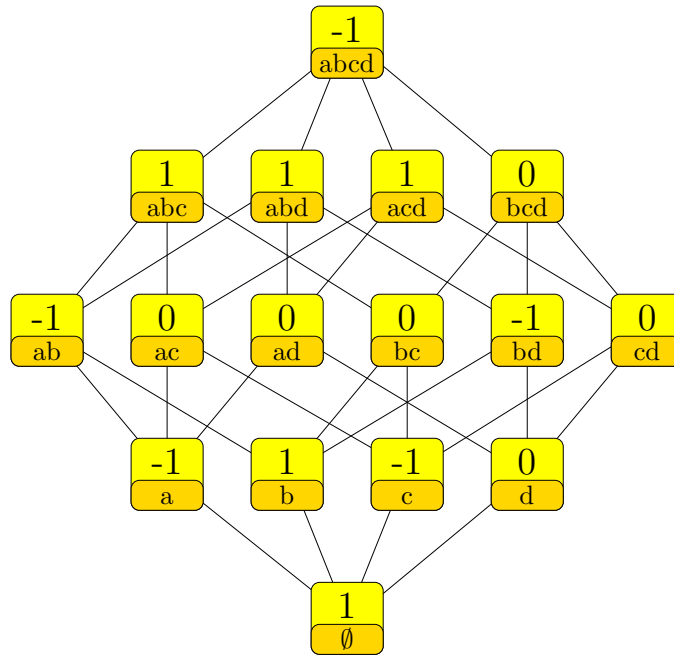
1.10.10.5 Differential imset (147)



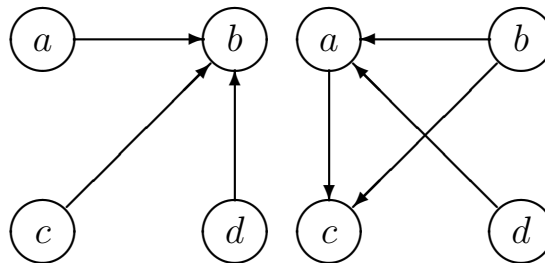
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



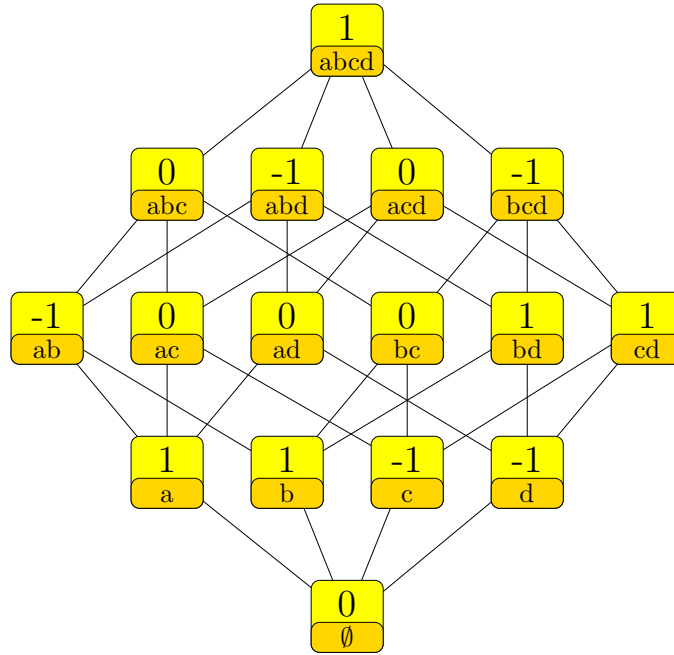
1.10.10.6 Differential imset (148)



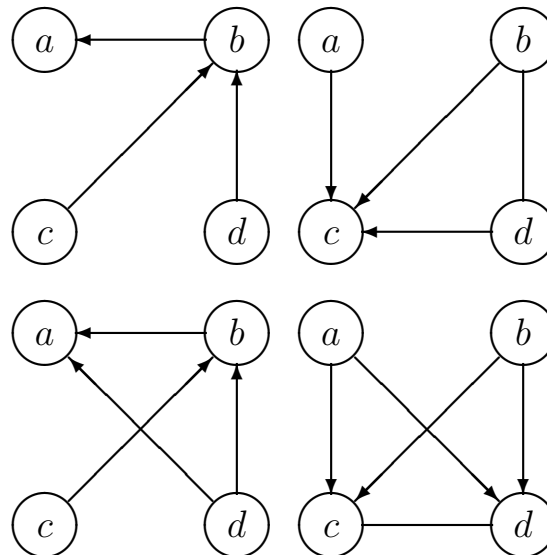
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



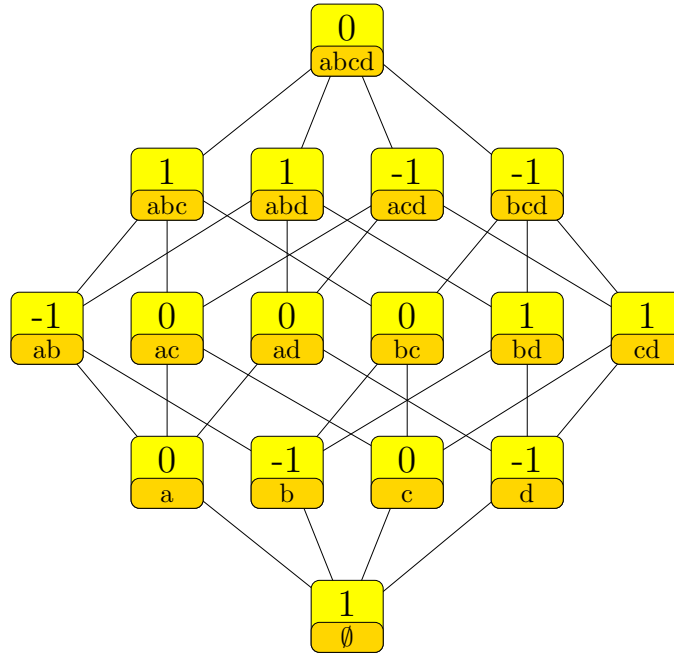
1.10.10.7 Differential imset (149)



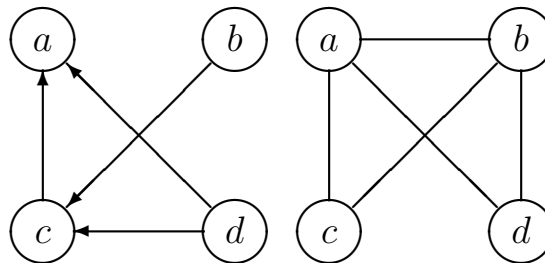
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$



1.10.10.8 Differential imset (150)



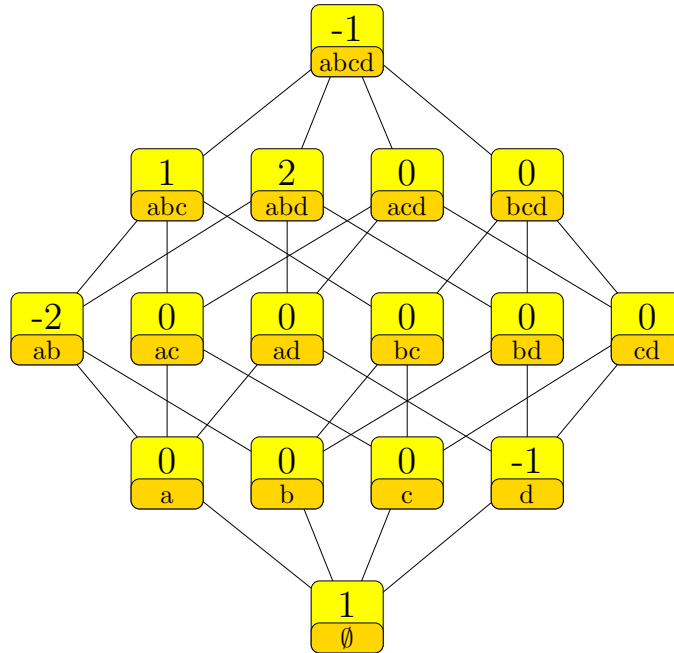
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



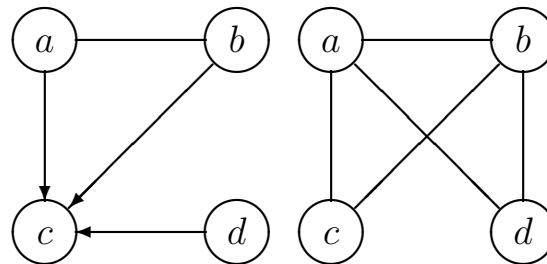
### 1.12 Squared Euclidean length 12

#### 1.12.6 Number of nonzero values 6

##### 1.12.6.1 Differential imset (151)

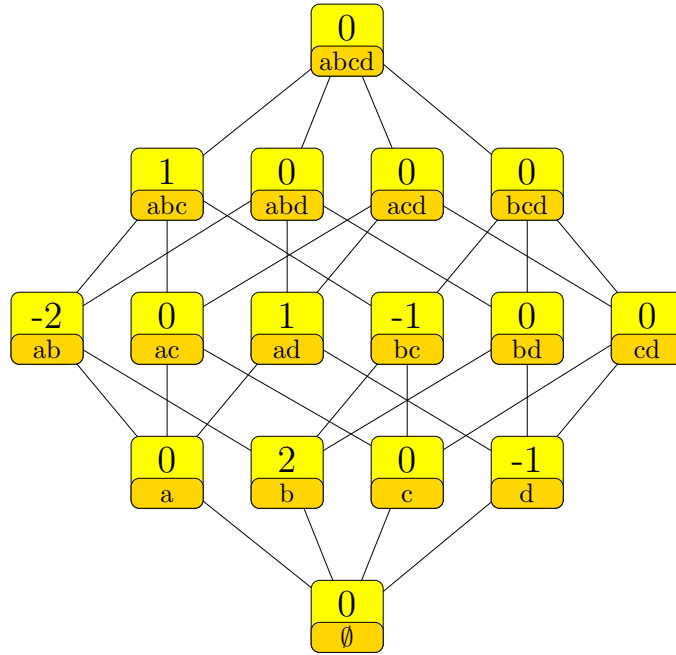


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,b,c\}} + 2\delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

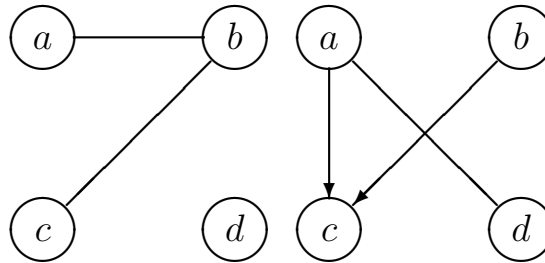




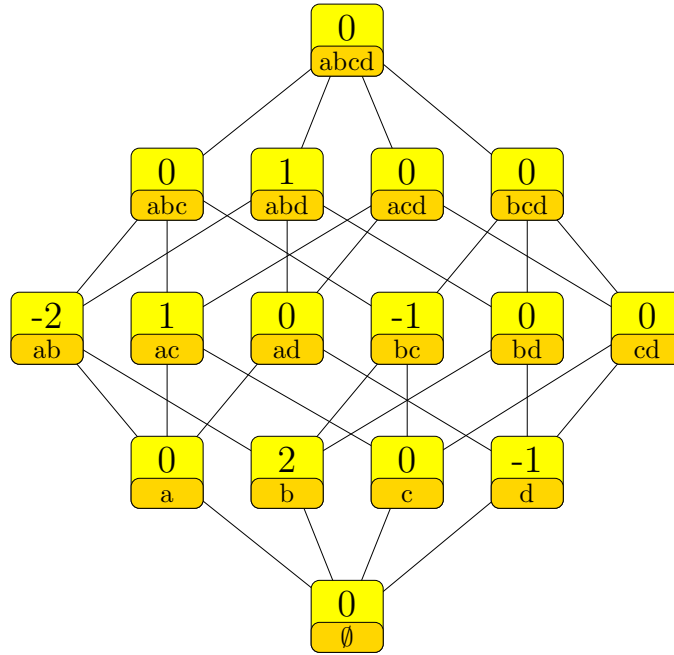
1.12.6.2 Differential imset (152)



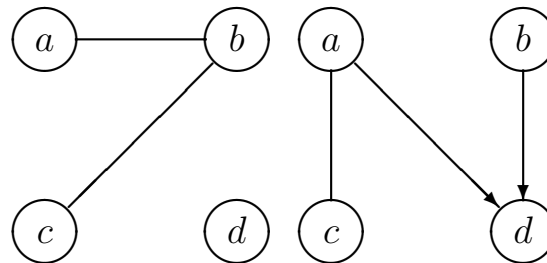
$$\begin{aligned}
 &+2\delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



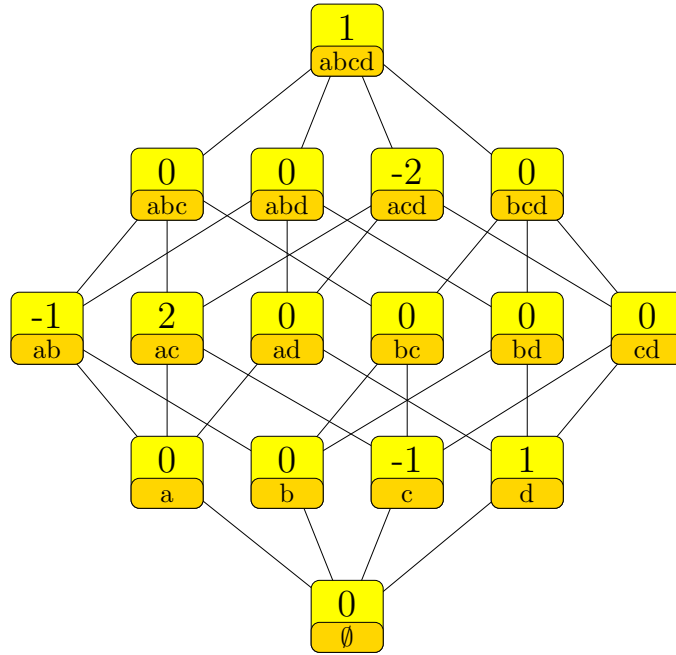
1.12.6.3 Differential imset (153)



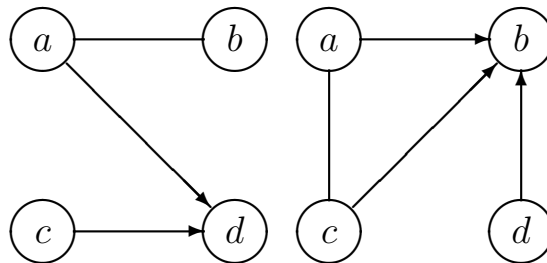
$$\begin{aligned}
 &+2\delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



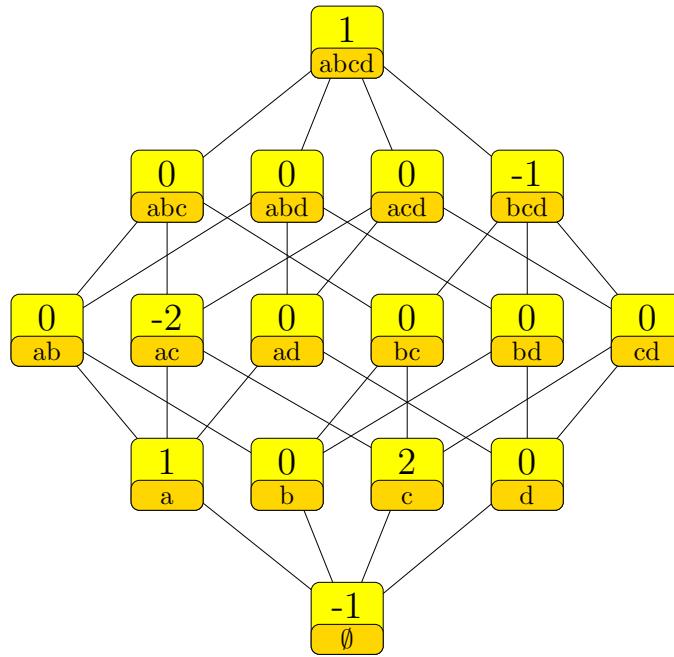
1.12.6.4 Differential imset (154)



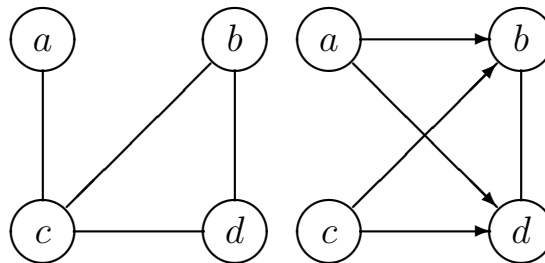
$$\begin{aligned}
 & -\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} + 2\delta_{\{a,c\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



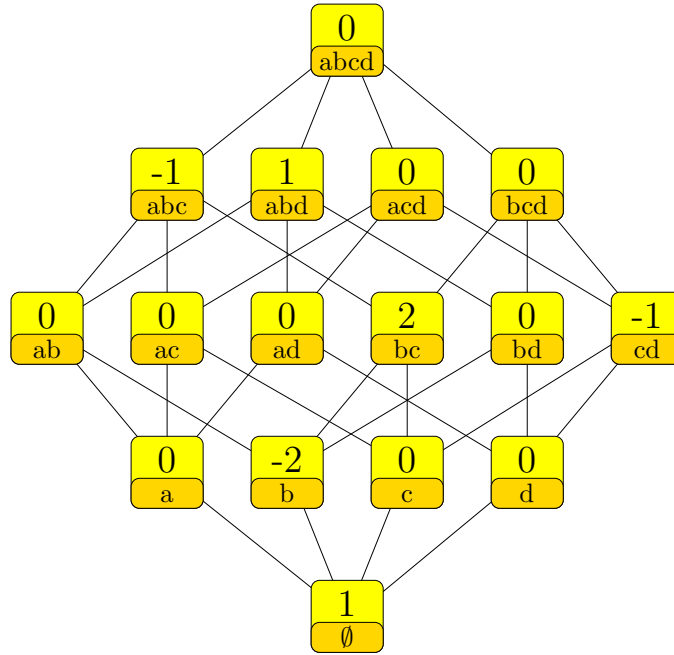
1.12.6.5 Differential imset (155)



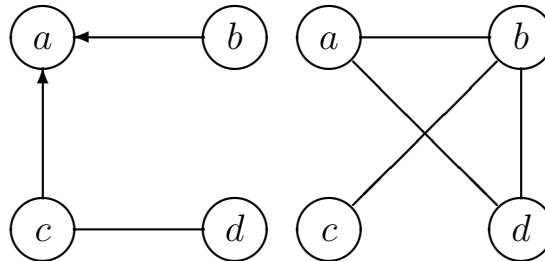
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 2\delta_{\{c\}} - 2\delta_{\{a,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,b|c \rangle} \\
 &= (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}})
 \end{aligned}$$



1.12.6.6 Differential imset (156)

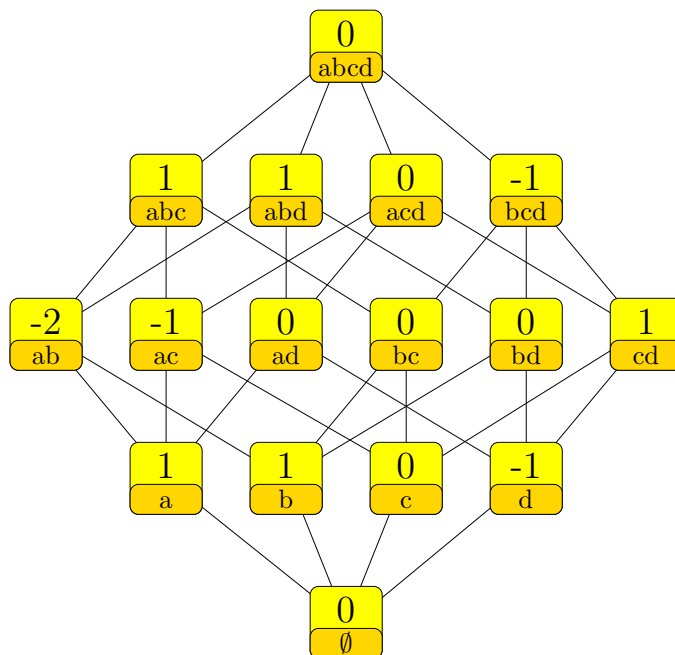


$$\begin{aligned}
 \delta_\emptyset - 2\delta_{\{b\}} + 2\delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,c|b \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

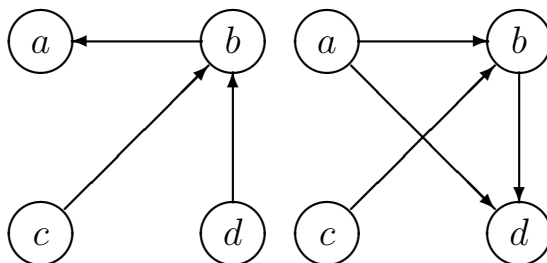


1.12.9 Number of nonzero values 9

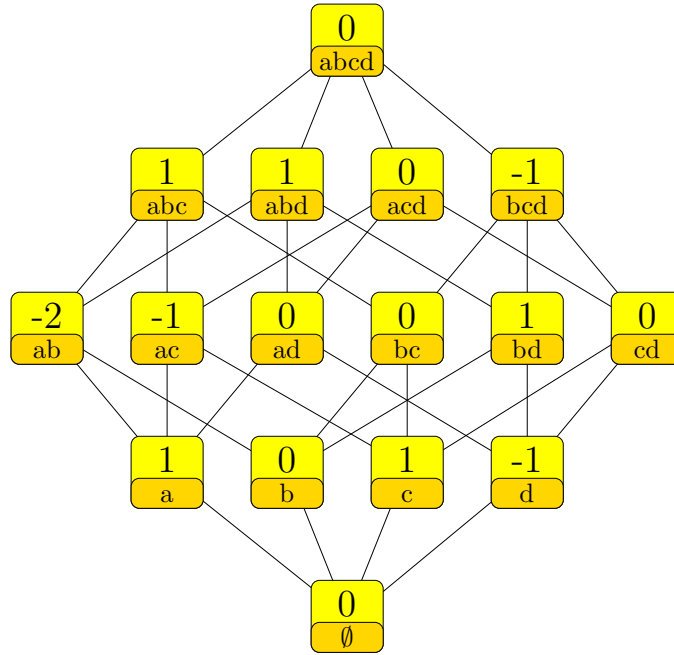
1.12.9.1 Differential imset (157)



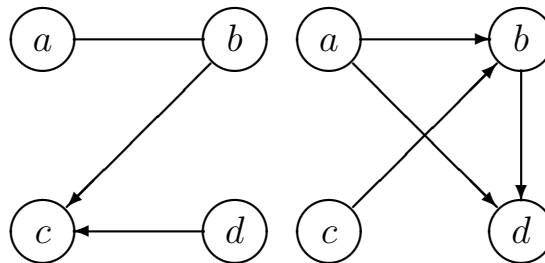
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle b,c|a \rangle} + u_{\langle a,d|b \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



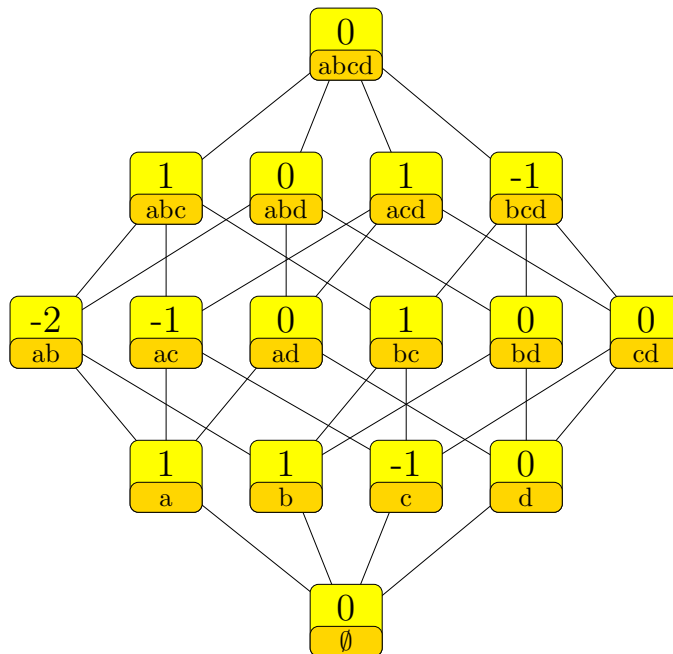
1.12.9.2 Differential imset (158)



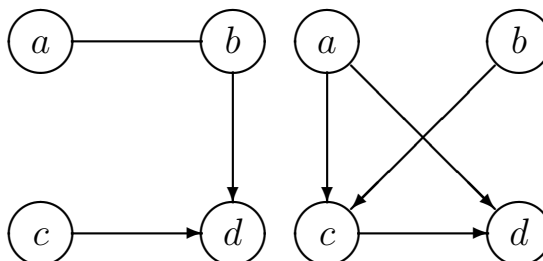
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.12.9.3 Differential imset (159)

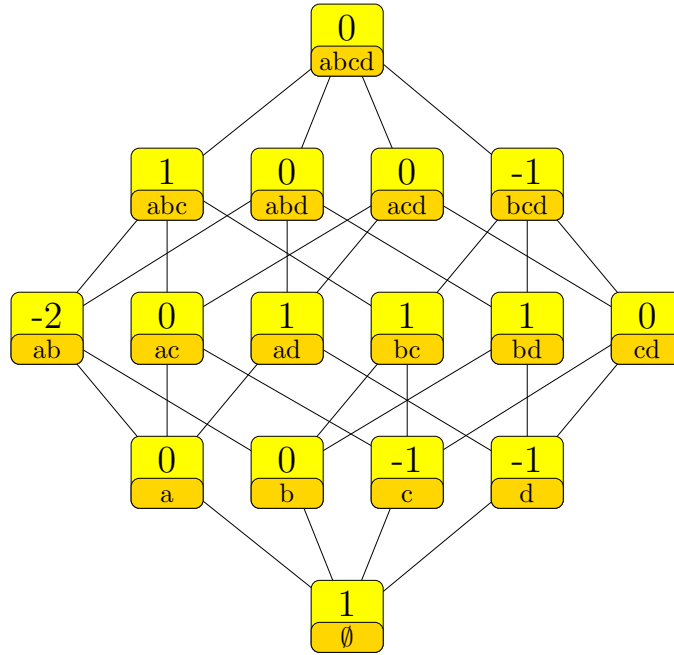


$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

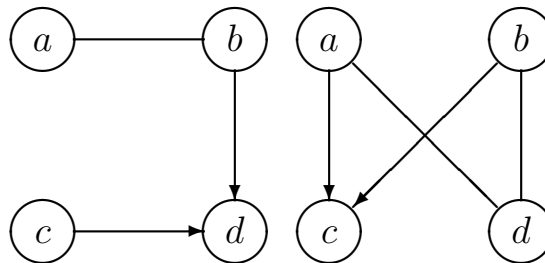




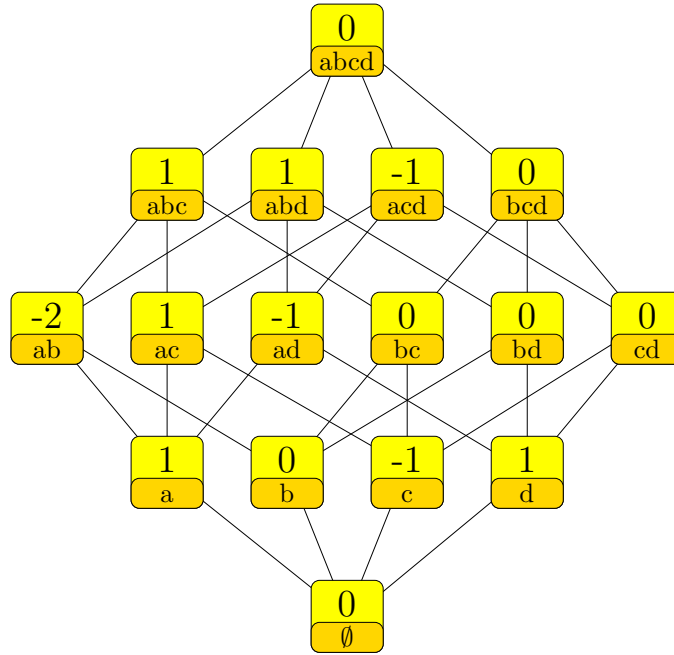
1.12.9.4 Differential imset (160)



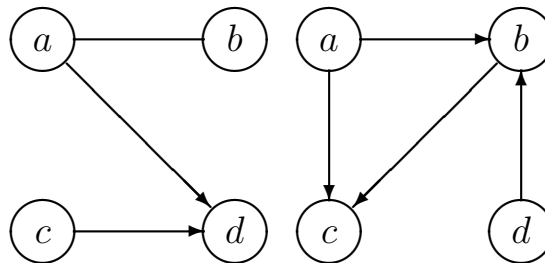
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



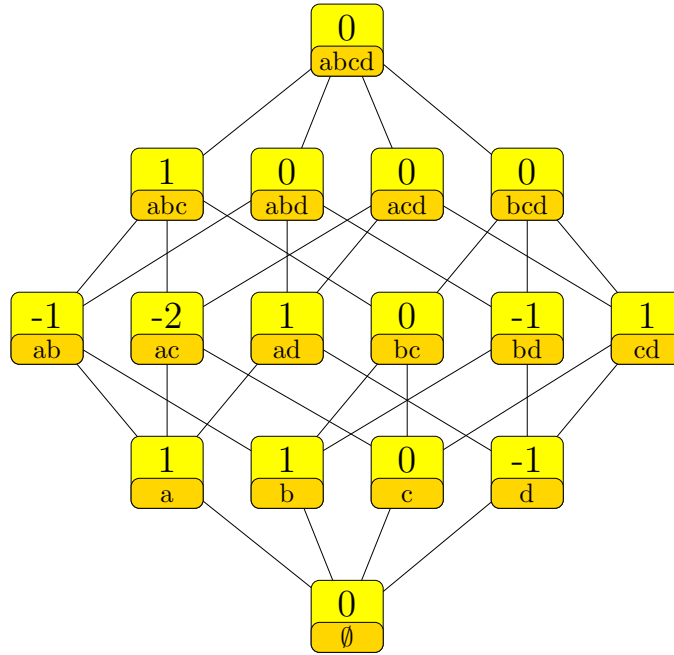
1.12.9.5 Differential imset (161)



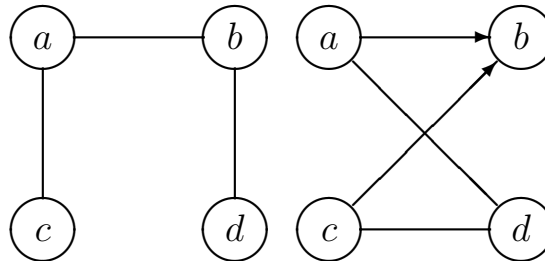
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset} - u_{\langle a,d|\emptyset} - u_{\langle c,d|ab} + u_{\langle b,d|ac} + u_{\langle b,c|a} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



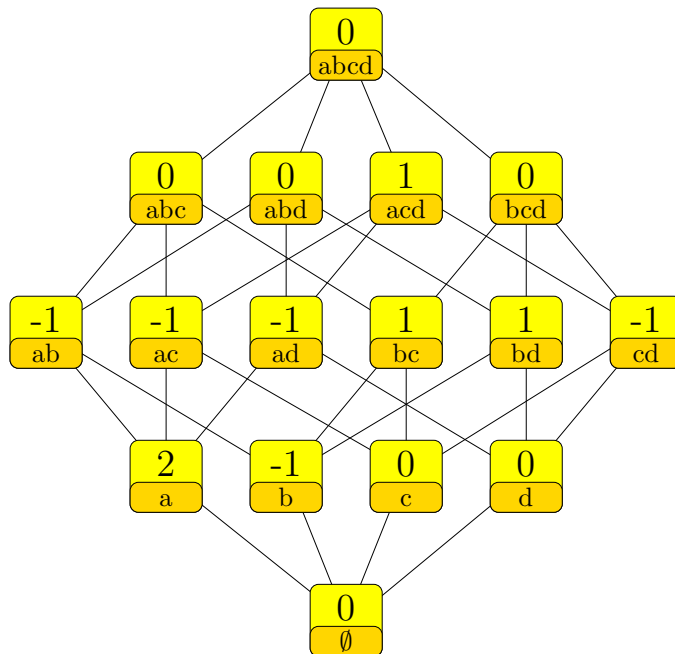
1.12.9.6 Differential imset (162)



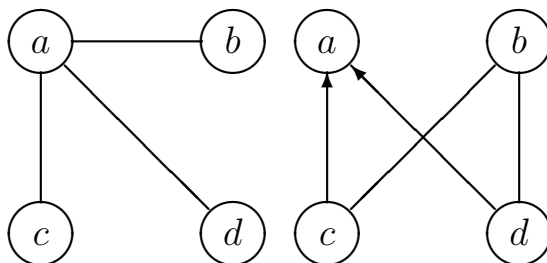
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle c,d|ab \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,d|b \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



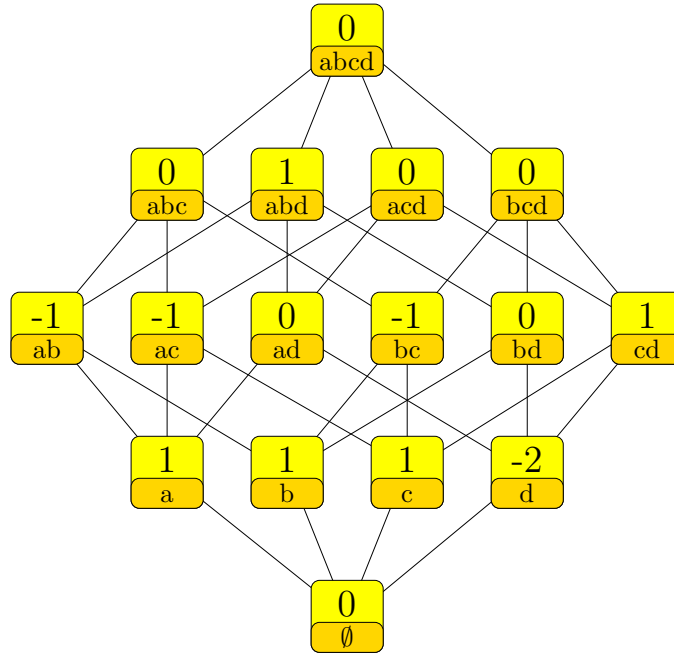
1.12.9.7 Differential imset (163)



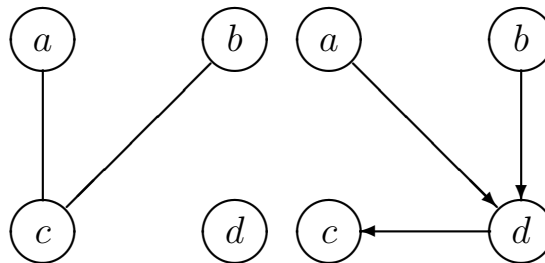
$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle c,d|ab \rangle} - u_{\langle a,b|cd \rangle} + u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} - u_{\langle c,d|b \rangle} \\
 &= (+2\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



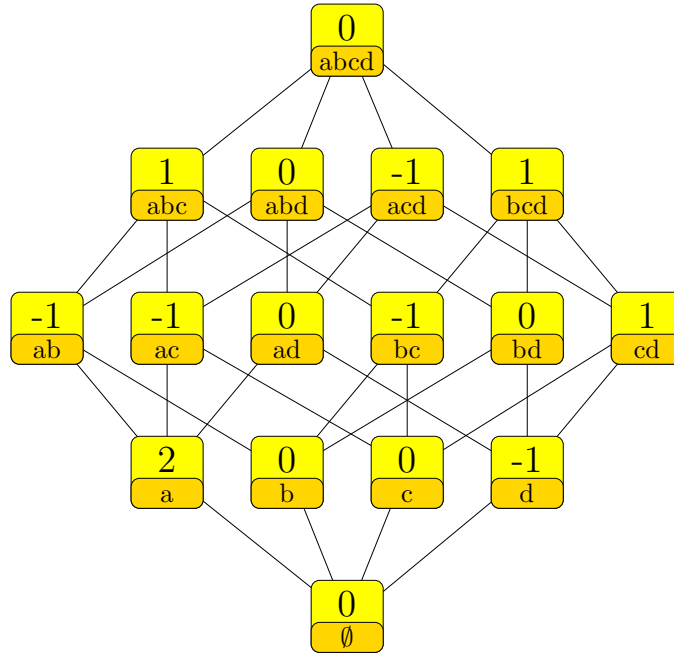
1.12.9.8 Differential imset (164)



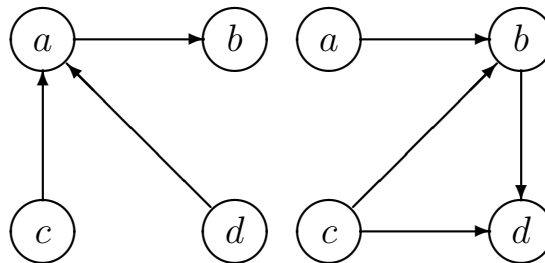
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



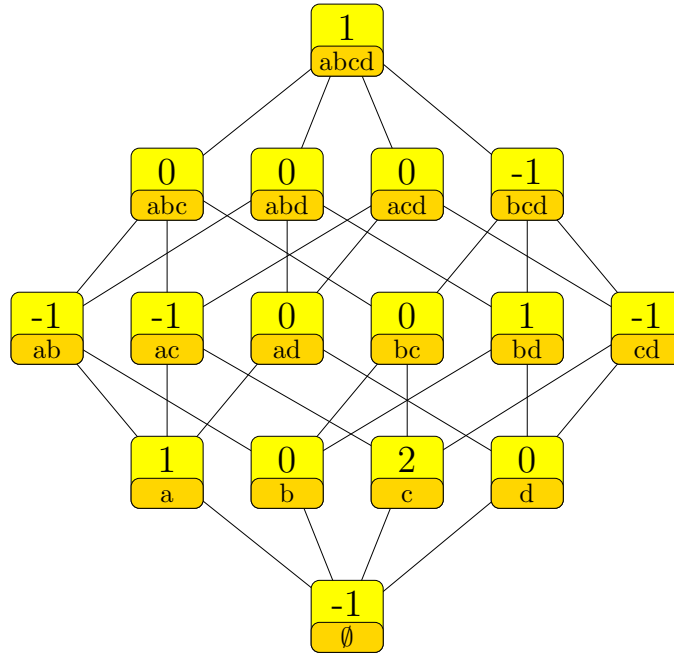
1.12.9.9 Differential imset (165)



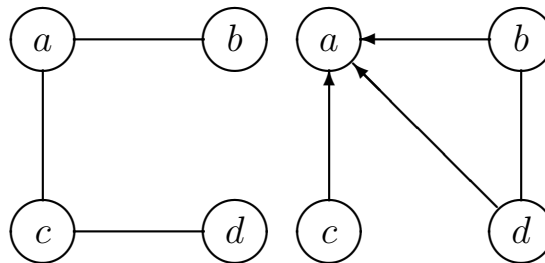
$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset\rangle} + u_{\langle c,d|\emptyset\rangle} + u_{\langle b,d|ac\rangle} - u_{\langle a,d|bc\rangle} + u_{\langle b,c|a\rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



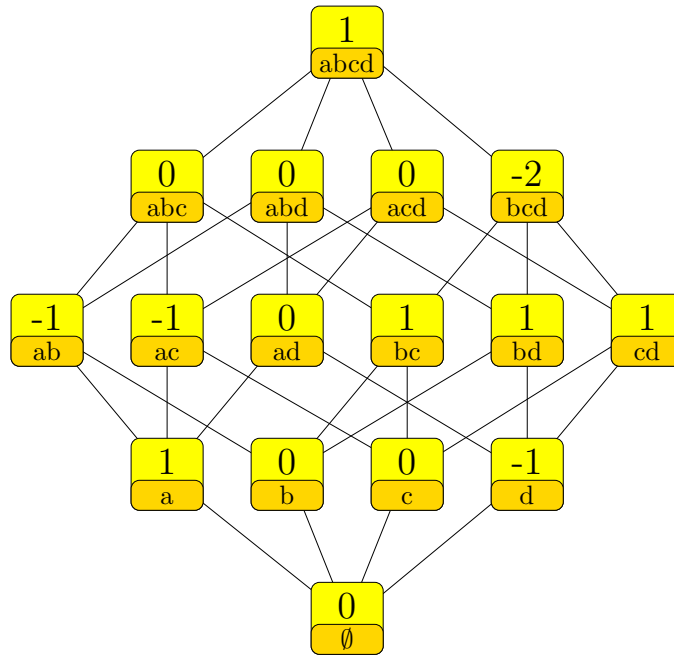
1.12.9.10 Differential imset (166)



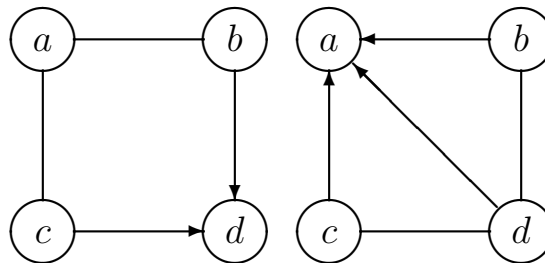
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + 2\delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,d|c \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



1.12.9.11 Differential imset (167)

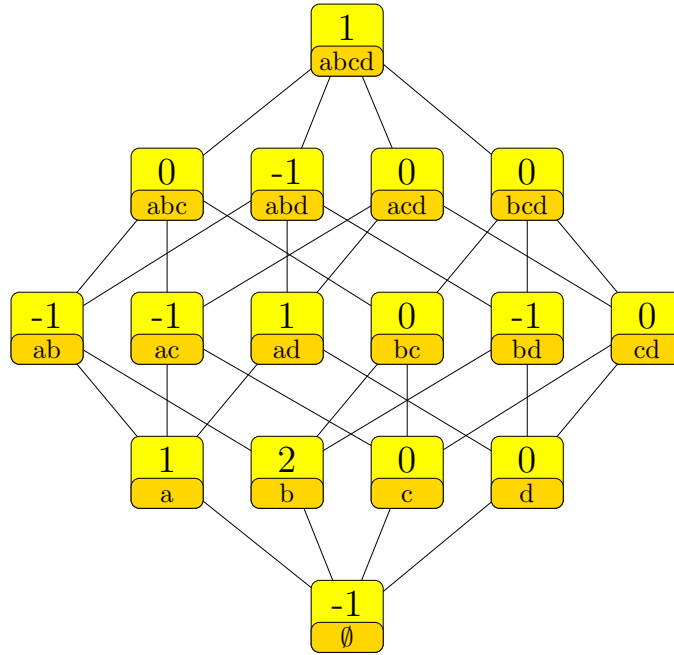


$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$

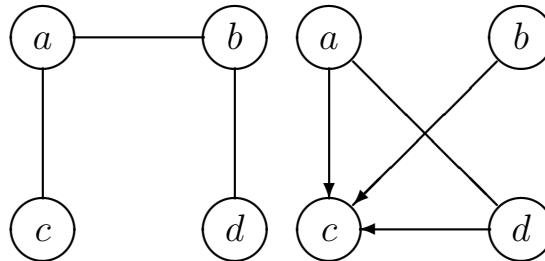




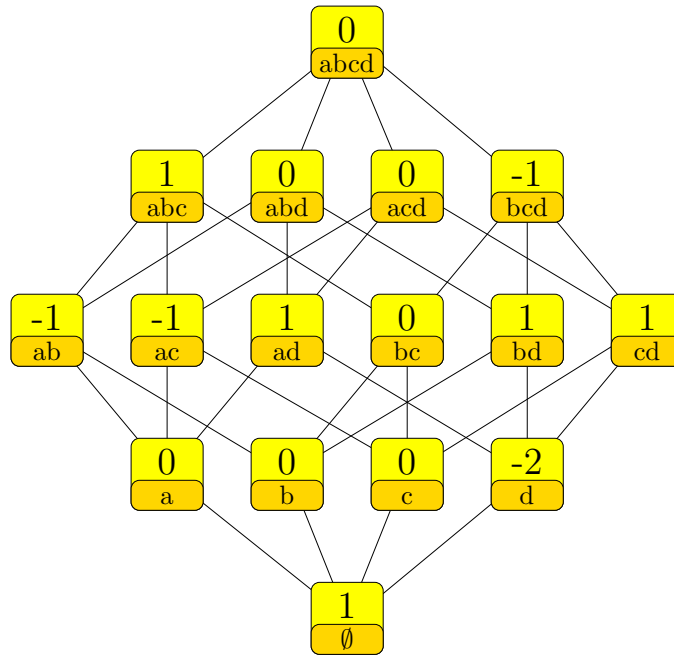
1.12.9.12 Differential imset (168)



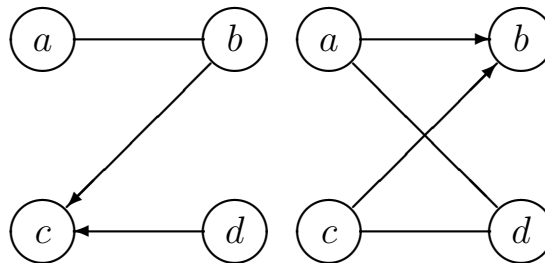
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + 2\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|a \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



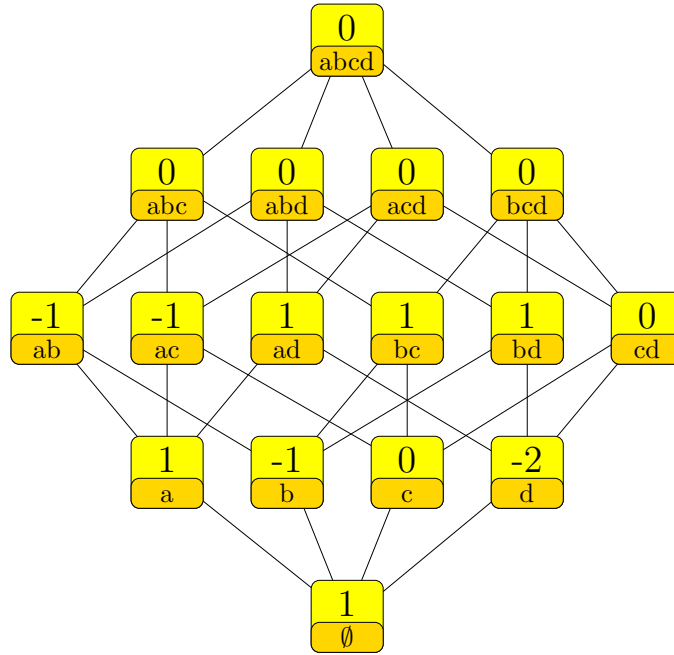
1.12.9.13 Differential imset (169)



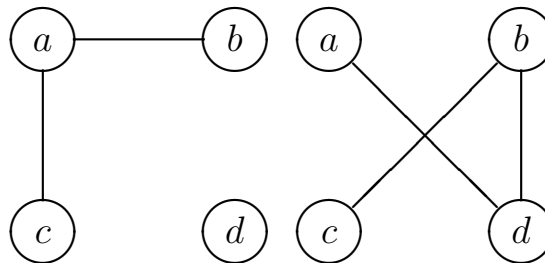
$$\begin{aligned}
 & \delta_{\emptyset} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



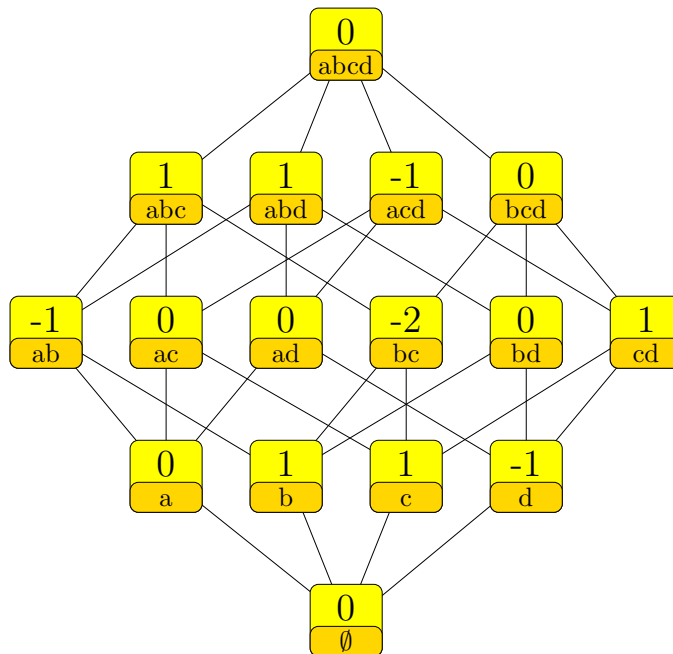
1.12.9.14 Differential imset (170)



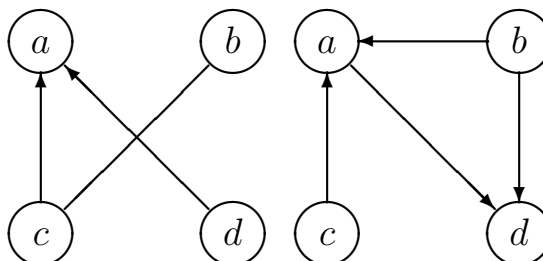
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,c|b \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



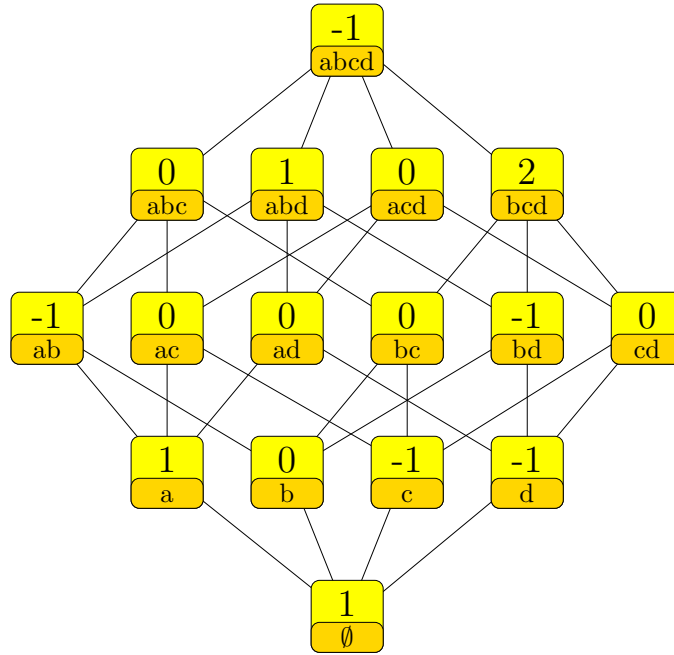
1.12.9.15 Differential imset (171)



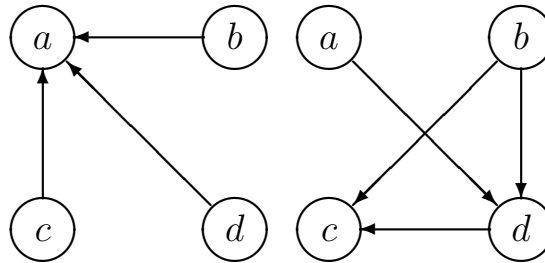
$$\begin{aligned}
 & \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= -u_{\langle b,c|\emptyset\rangle} + u_{\langle b,d|\emptyset\rangle} - u_{\langle c,d|ab\rangle} + u_{\langle a,b|cd\rangle} + u_{\langle c,d|b\rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



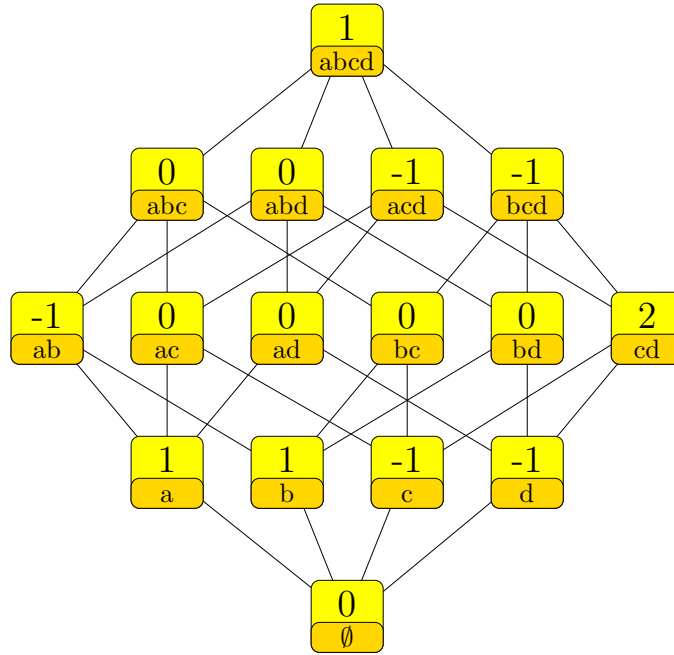
1.12.9.16 Differential imset (172)



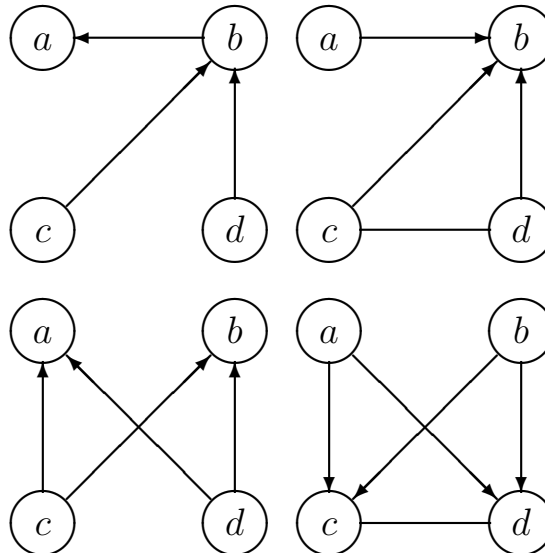
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} + 2\delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



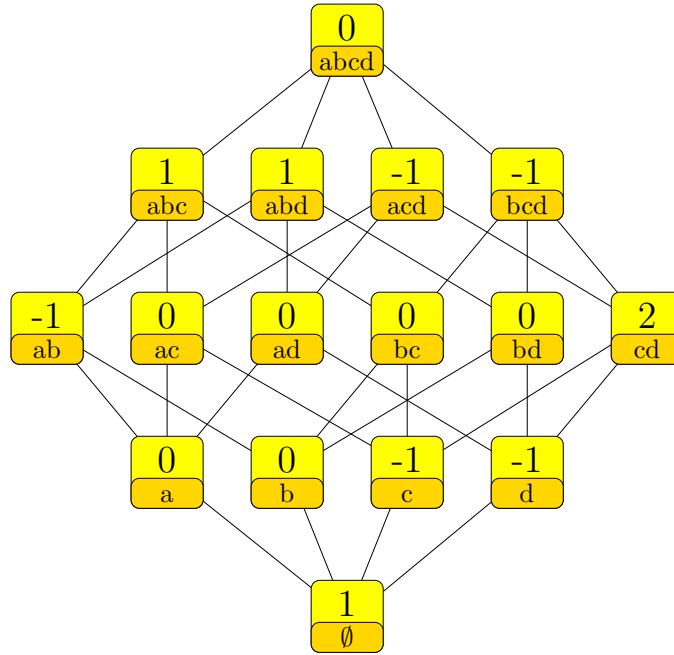
1.12.9.17 Differential imset (173)



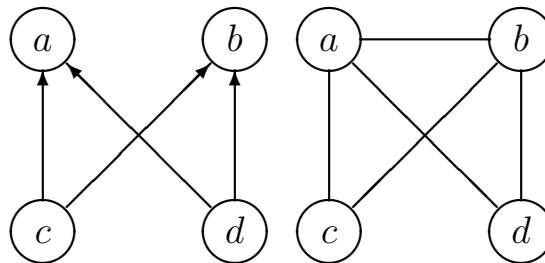
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}})
 \end{aligned}$$



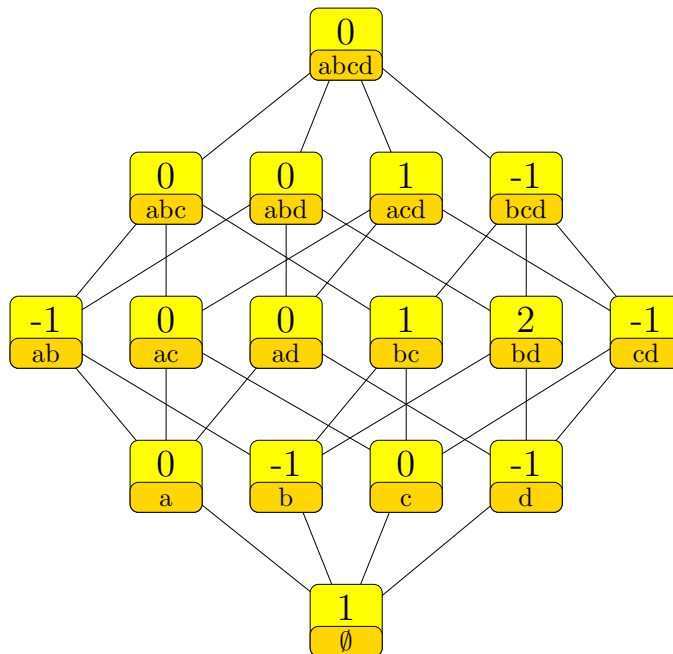
1.12.9.18 Differential imset (174)



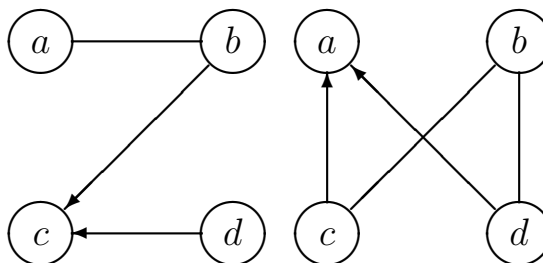
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + 2\delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.12.9.19 Differential imset (175)

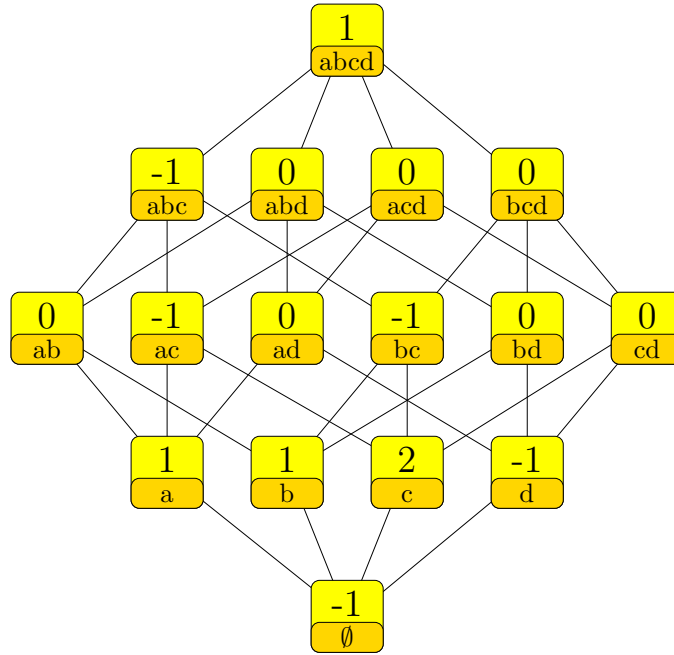


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} + 2\delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle a,b|cd \rangle} + u_{\langle b,d|a \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

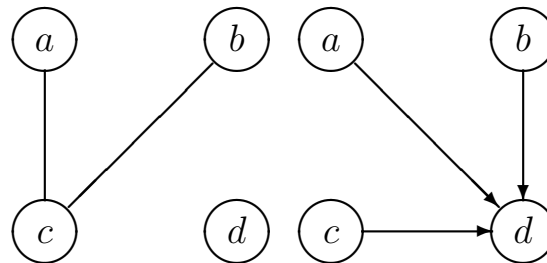




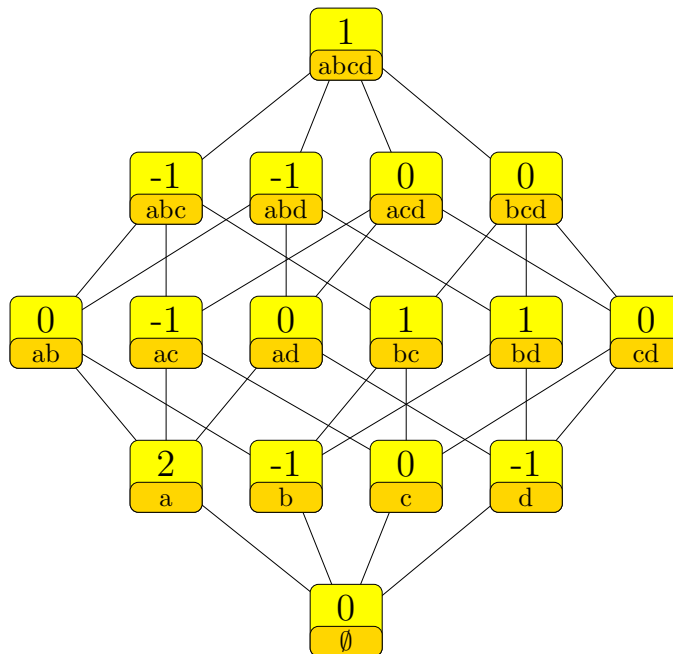
1.12.9.20 Differential imset (176)



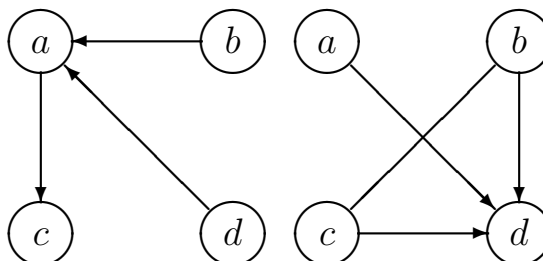
$$\begin{aligned}
 & -\delta_\emptyset + \delta_{\{a\}} + \delta_{\{b\}} + 2\delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_\emptyset + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



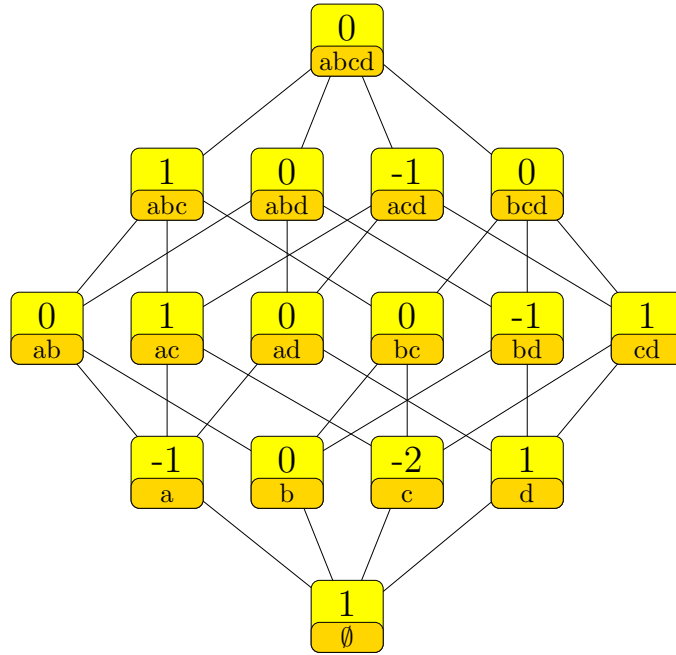
1.12.9.21 Differential imset (177)



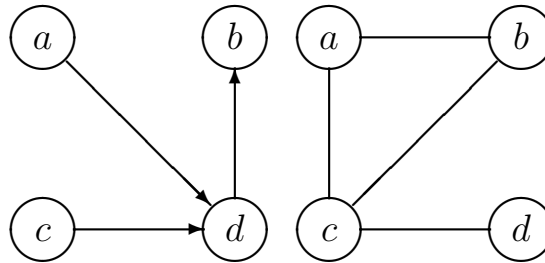
$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



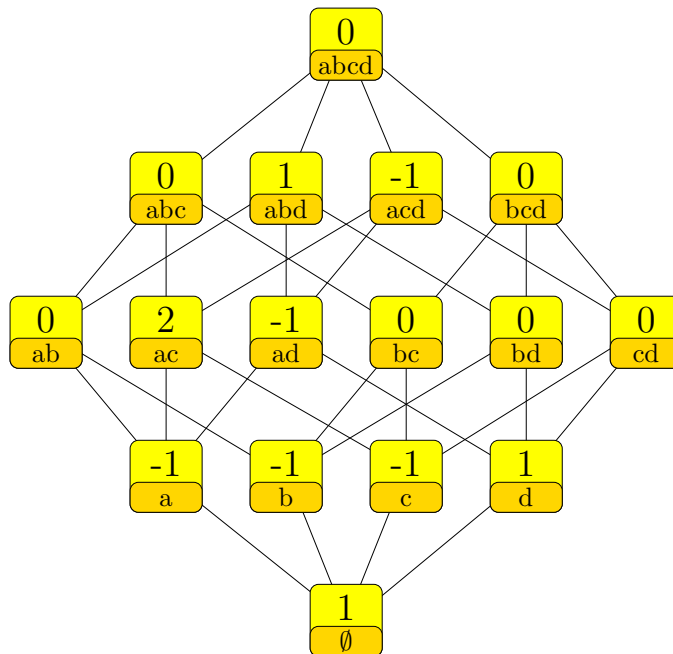
1.12.9.22 Differential imset (178)



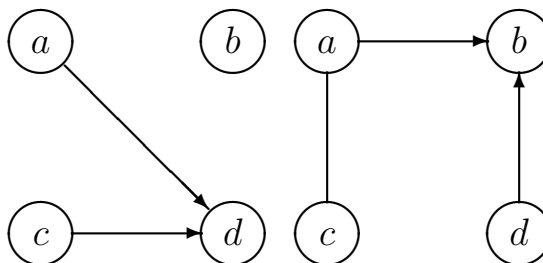
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - 2\delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|ad \rangle} - u_{\langle a,d|c \rangle} + u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.12.9.23 Differential imset (179)

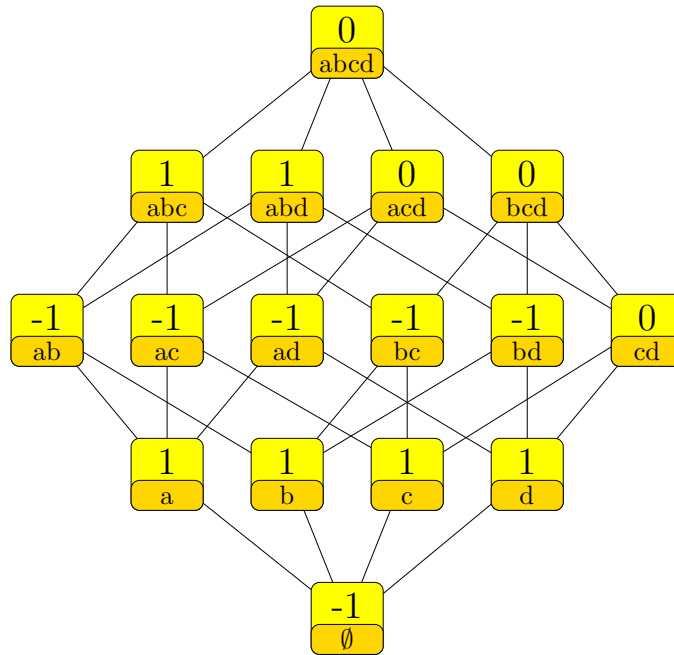


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{d\}} + 2\delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

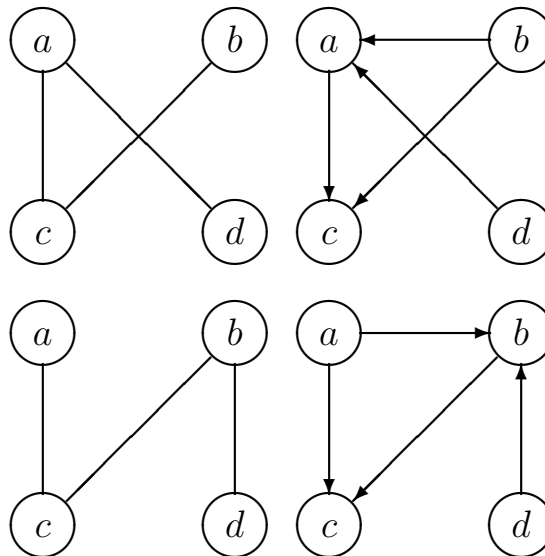


1.12.12 Number of nonzero values 12

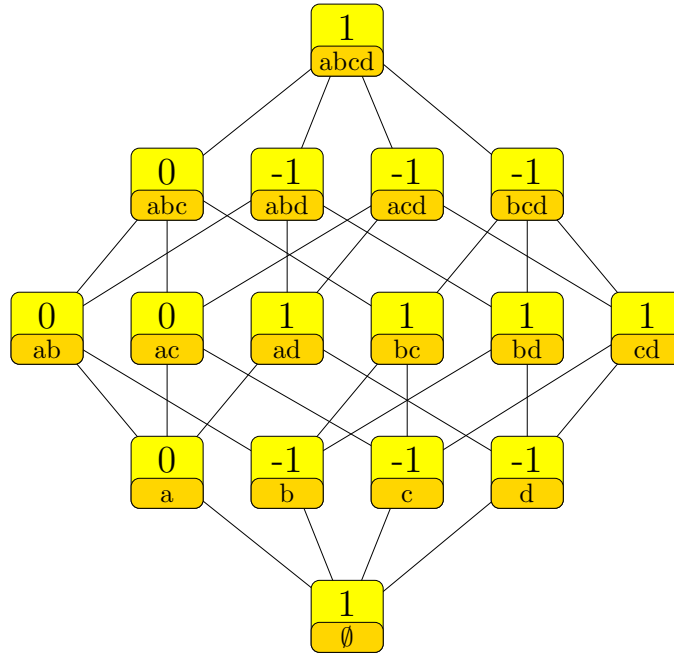
1.12.12.1 Differential imset (180)



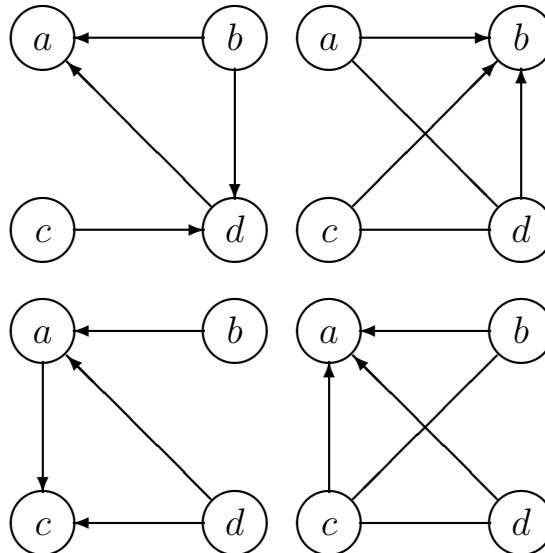
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle b,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,b|c \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



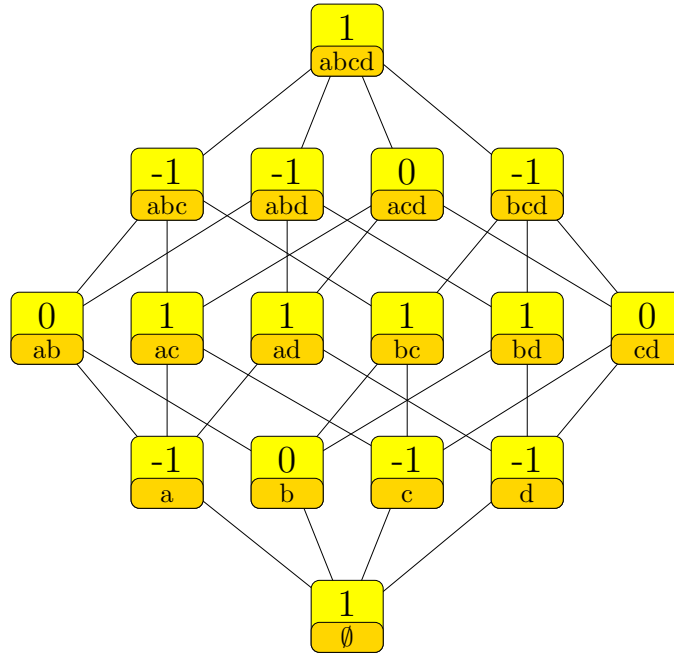
1.12.12.2 Differential imset (181)



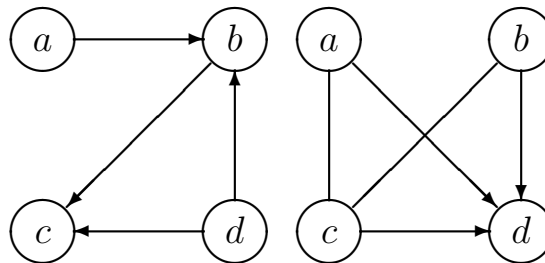
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



1.12.12.3 Differential imset (182)



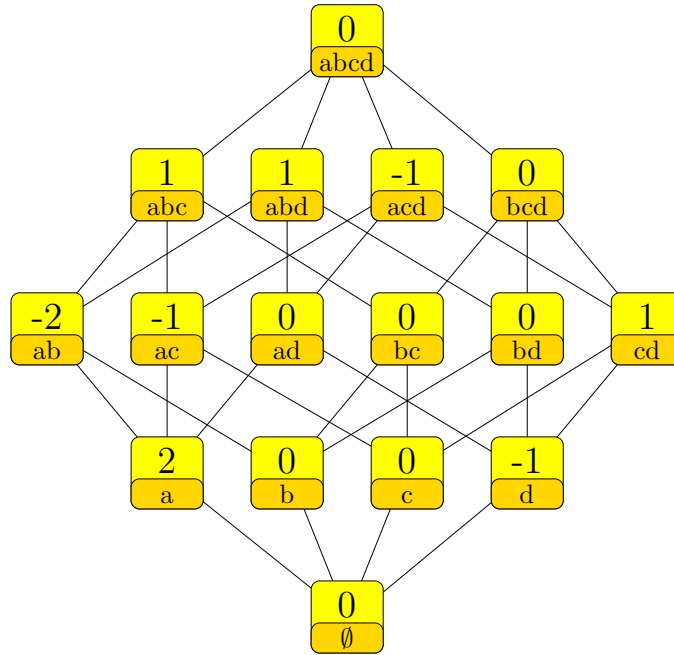
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle a,b|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



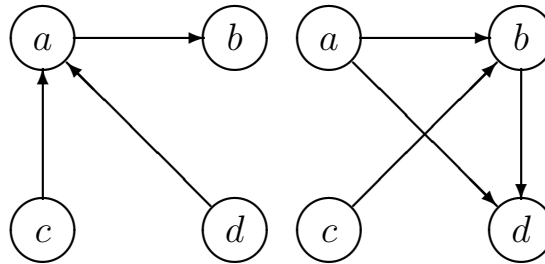
### 1.14 Squared Euclidean length 14

#### 1.14.8 Number of nonzero values 8

##### 1.14.8.1 Differential imset (183)

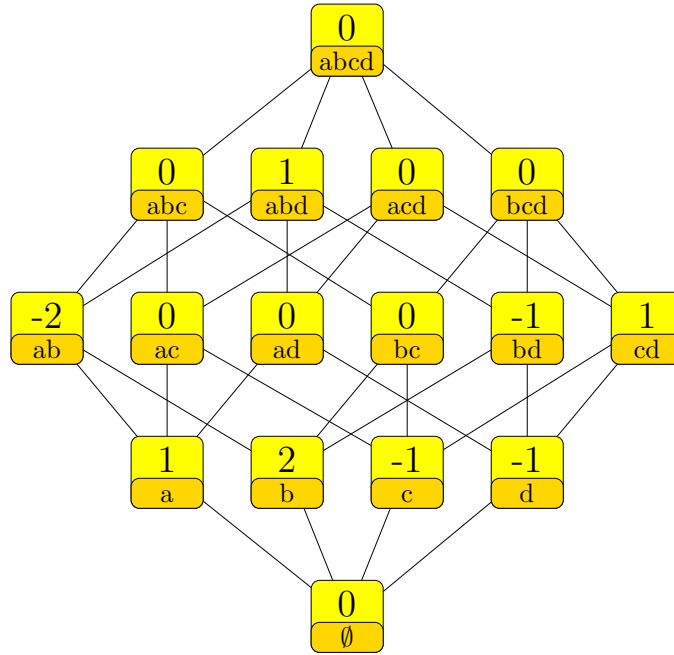


$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

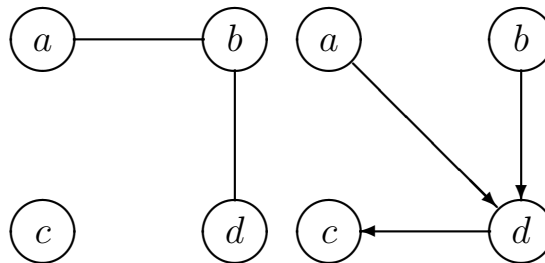




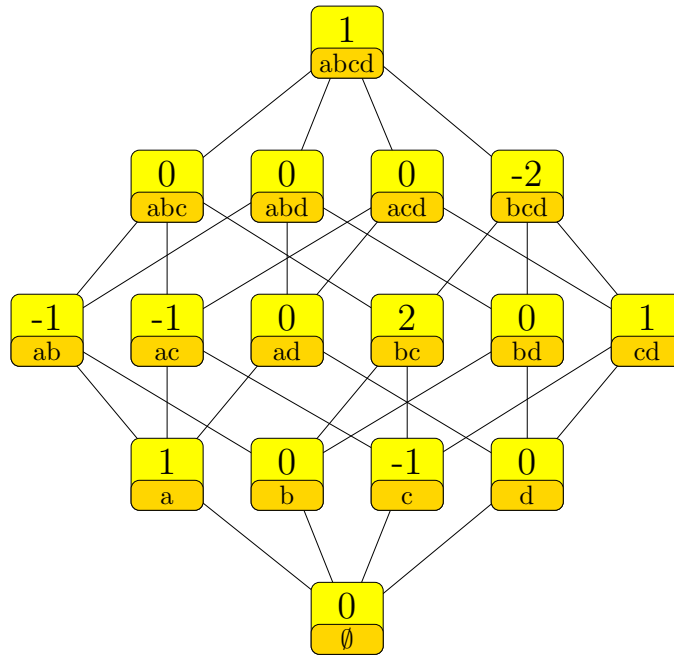
1.14.8.2 Differential imset (184)



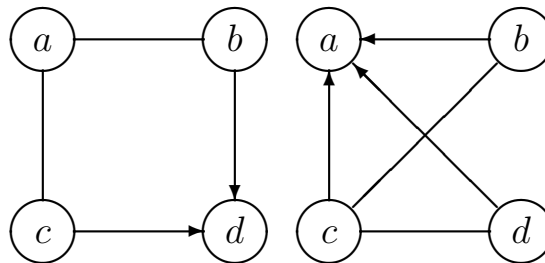
$$\begin{aligned}
 & \delta_{\{a\}} + 2\delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



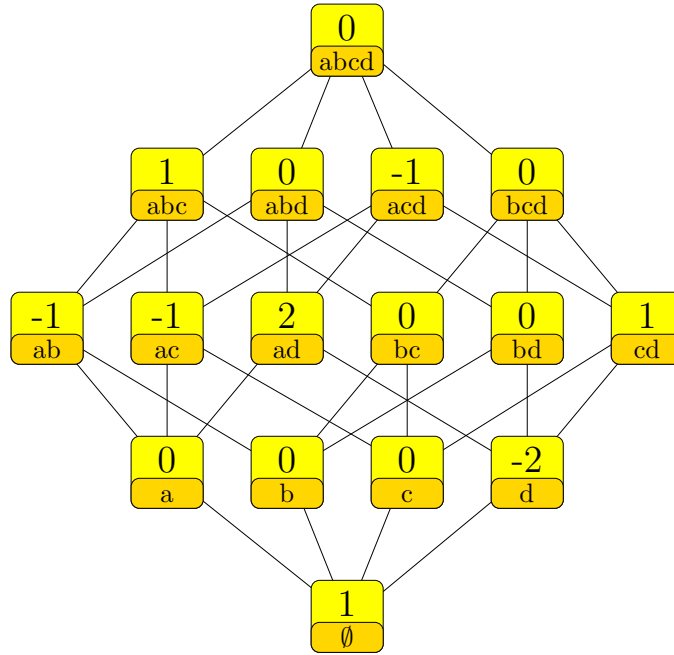
1.14.8.3 Differential imset (185)



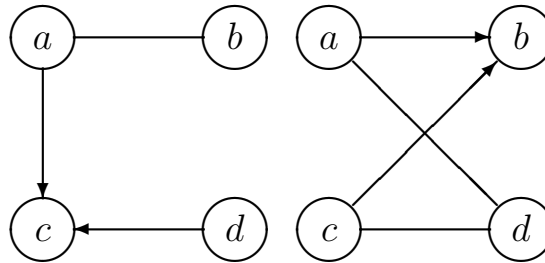
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + 2\delta_{\{b,c\}} + \delta_{\{c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



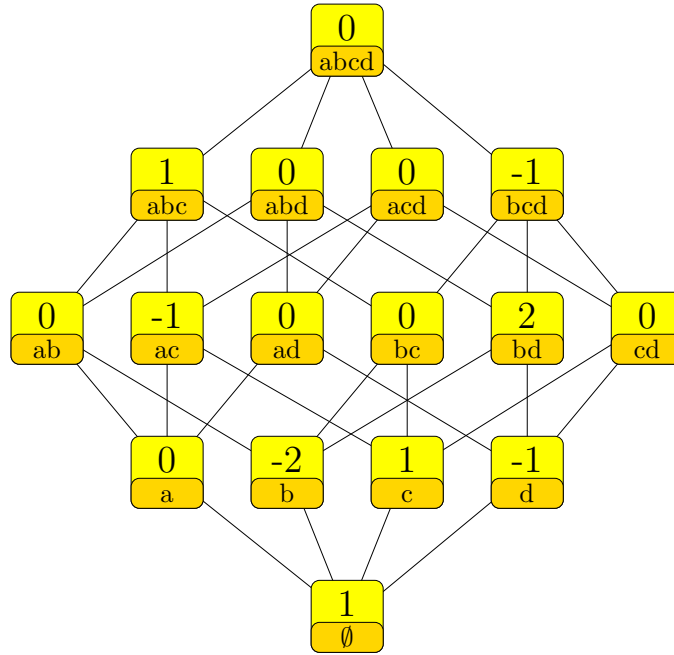
1.14.8.4 Differential imset (186)



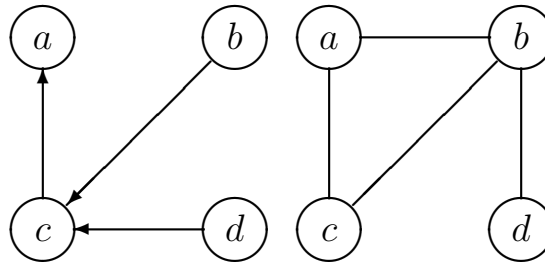
$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + 2\delta_{\{a,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.14.8.5 Differential imset (187)

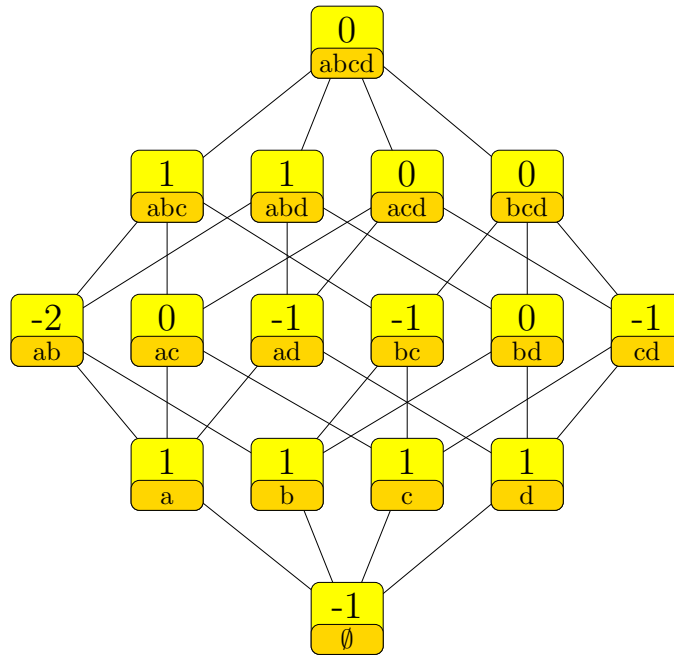


$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + 2\delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle a,b|c \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

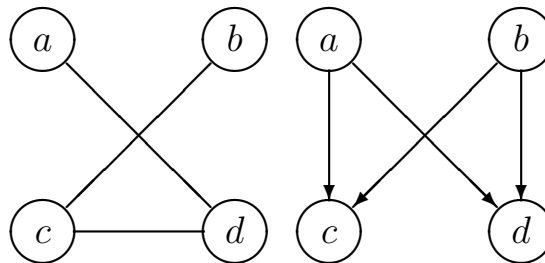


1.14.11 Number of nonzero values 11

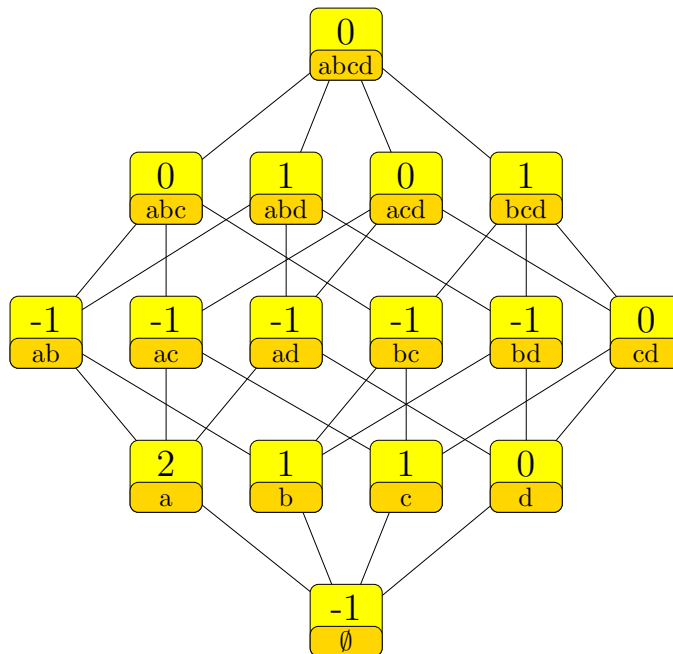
1.14.11.1 Differential imset (188)



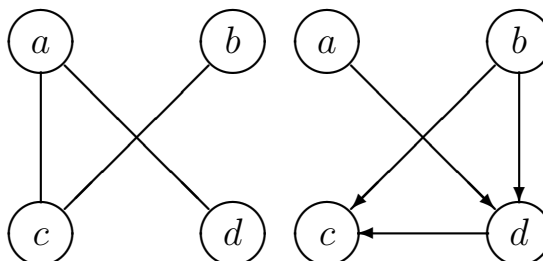
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



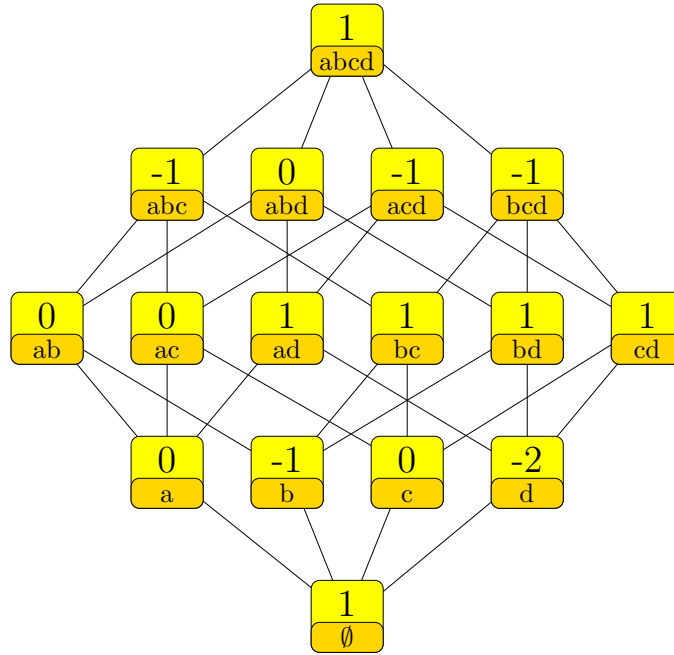
1.14.11.2 Differential imset (189)



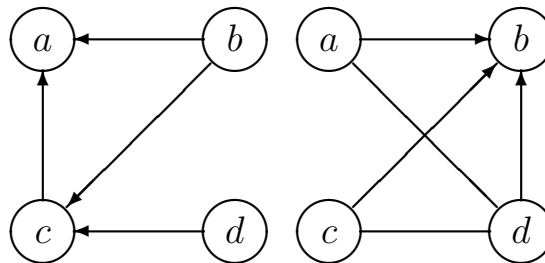
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 & = -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle c,d|b \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



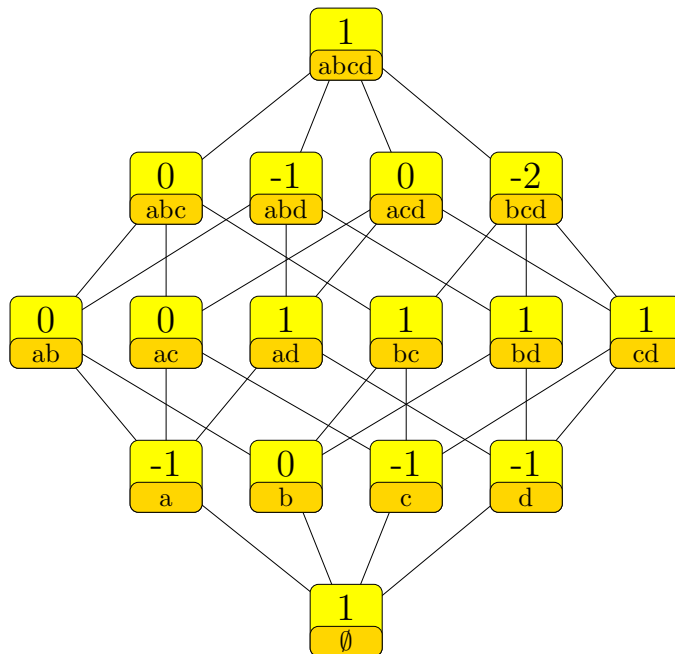
1.14.11.3 Differential imset (190)



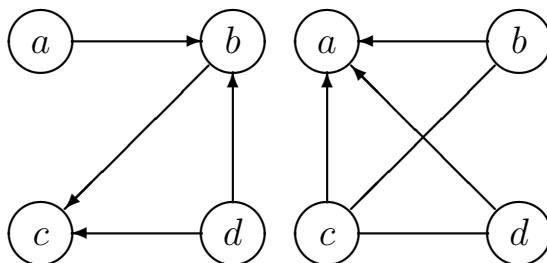
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{b\}} - 2\delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



1.14.11.4 Differential imset (191)

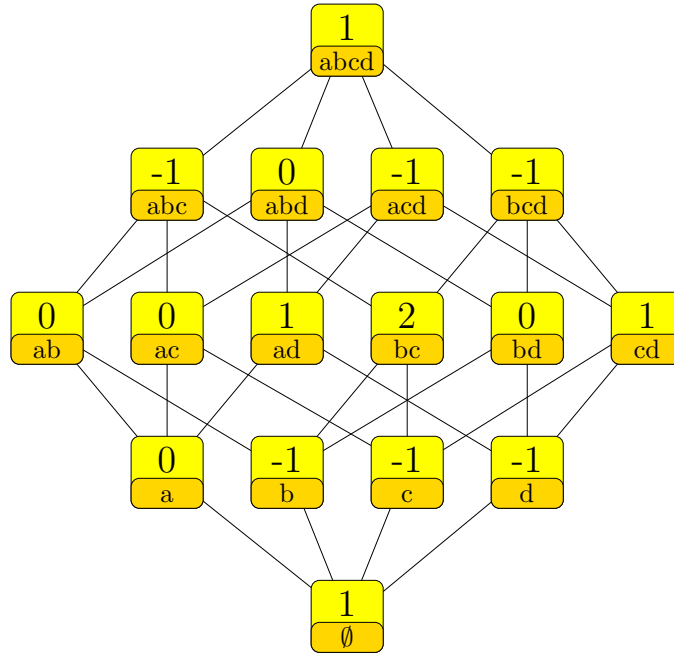


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$

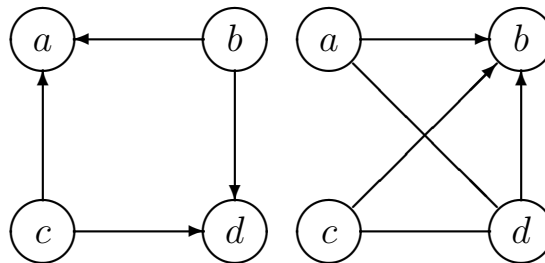




1.14.11.5 Differential imset (192)



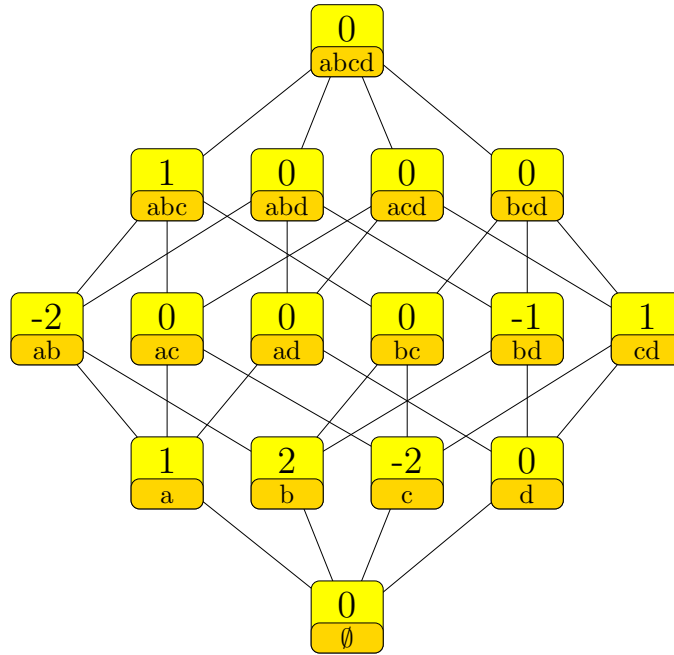
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + 2\delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle a,d|bc \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} + 2\delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



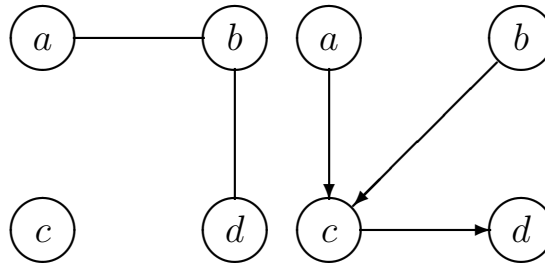
### 1.16 Squared Euclidean length 16

#### 1.16.7 Number of nonzero values 7

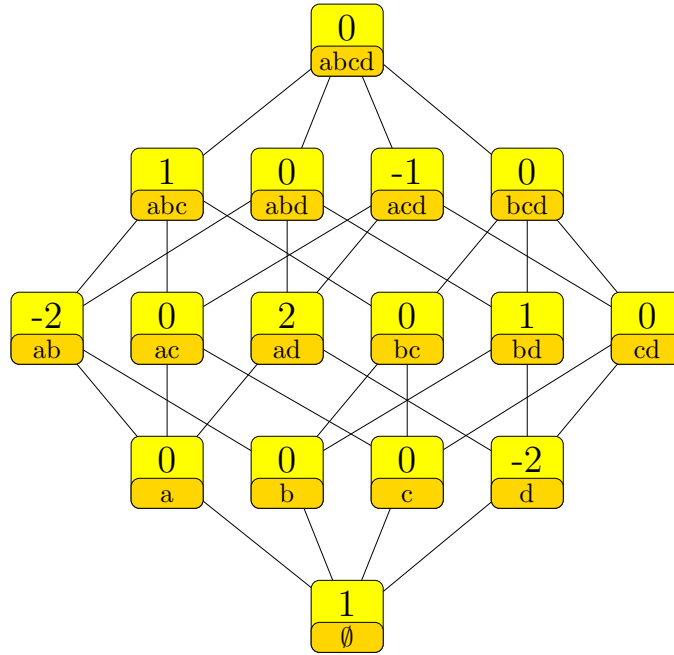
##### 1.16.7.1 Differential imset (193)



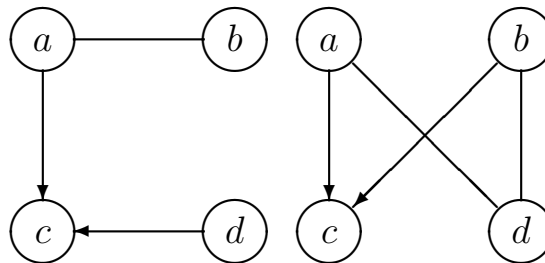
$$\begin{aligned}
 & \delta_{\{a\}} + 2\delta_{\{b\}} - 2\delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



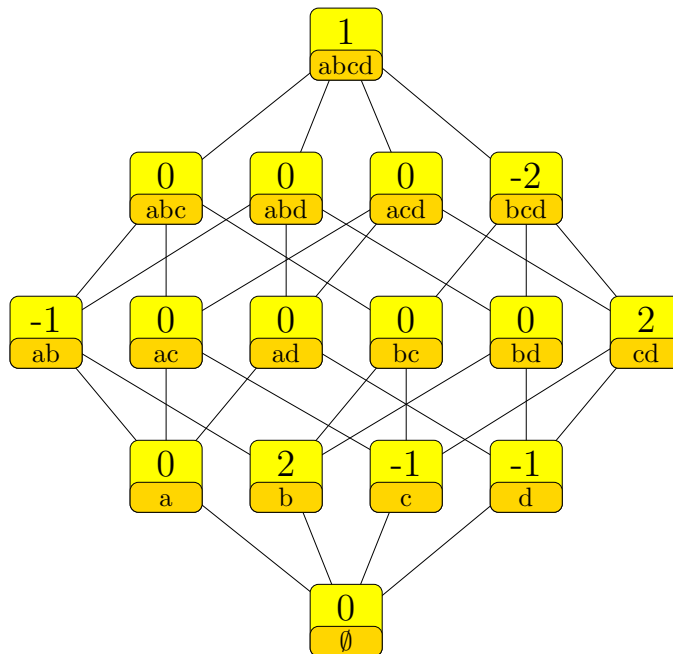
1.16.7.2 Differential imset (194)



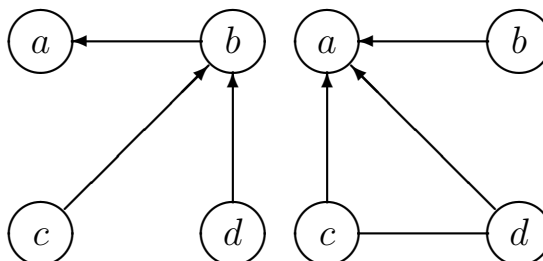
$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{d\}} - 2\delta_{\{a,b\}} + 2\delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.16.7.3 Differential imset (195)

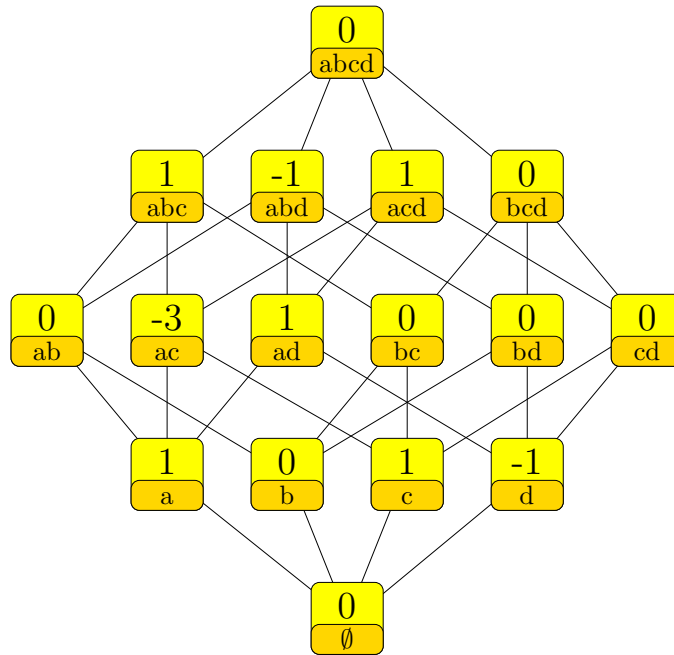


$$\begin{aligned}
 &+2\delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + 2\delta_{\{c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$

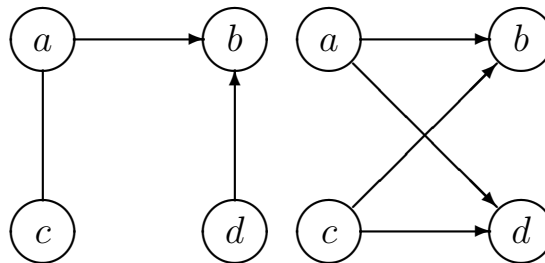


1.16.8 Number of nonzero values 8

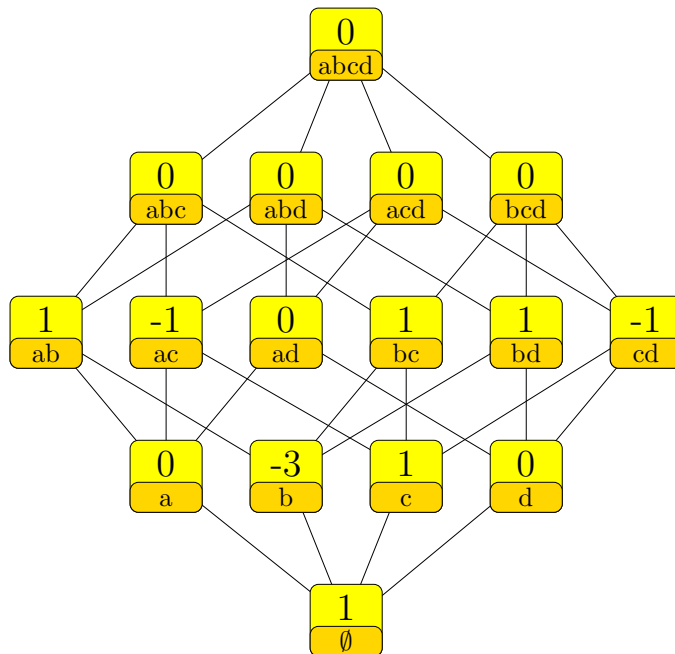
1.16.8.1 Differential imset (196)



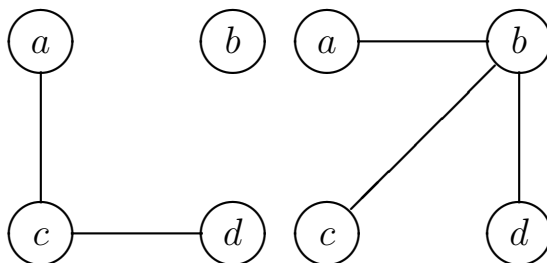
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} - 3\delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + 2\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.16.8.2 Differential imset (197)

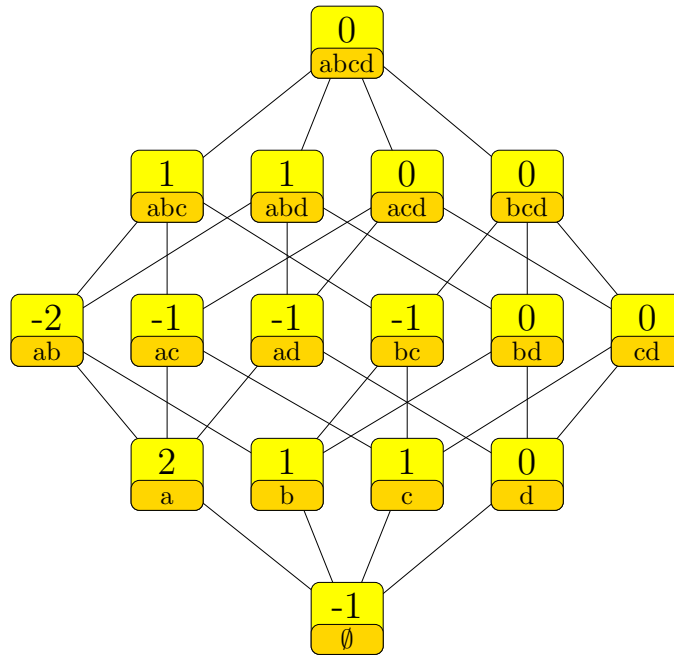


$$\begin{aligned}
 & \delta_\emptyset - 3\delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

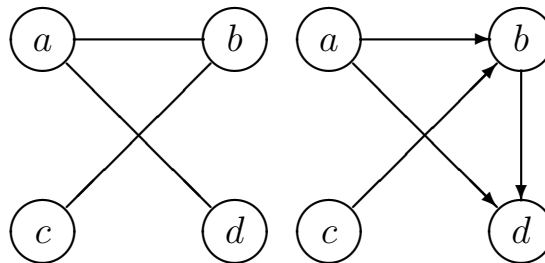


1.16.10 Number of nonzero values 10

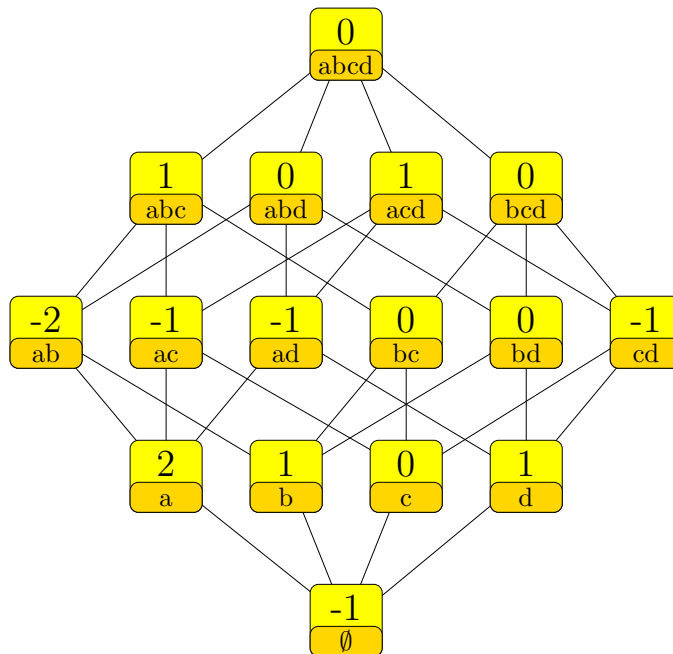
1.16.10.1 Differential imset (198)



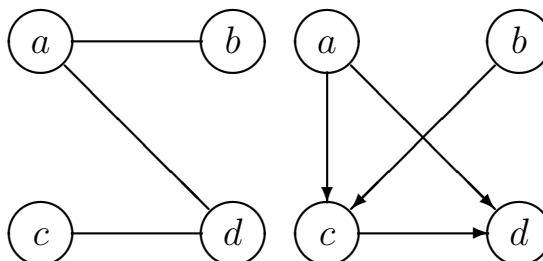
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 & = -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.16.10.2 Differential imset (199)

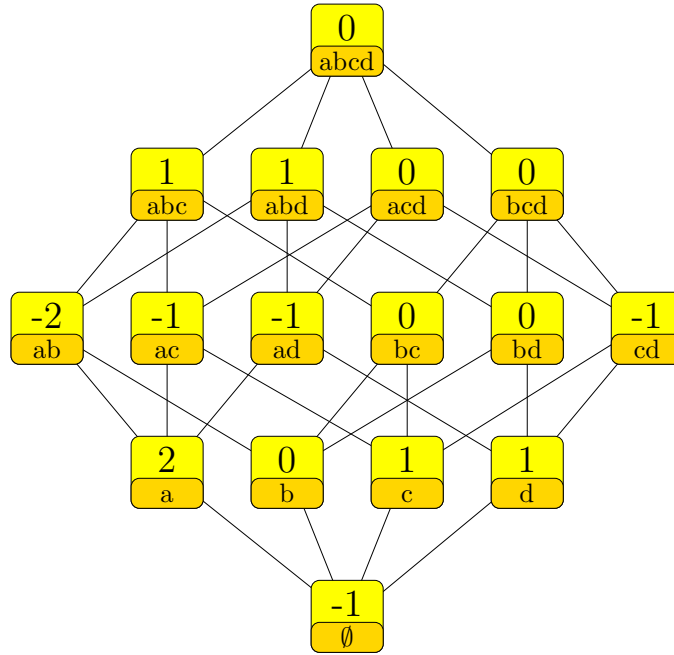


$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 & = -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,c|d \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

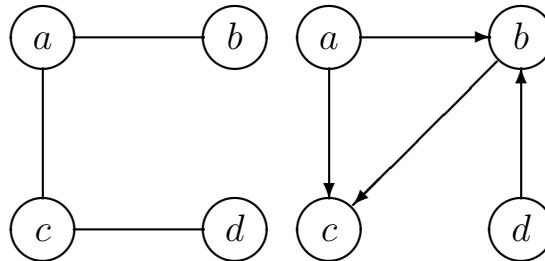




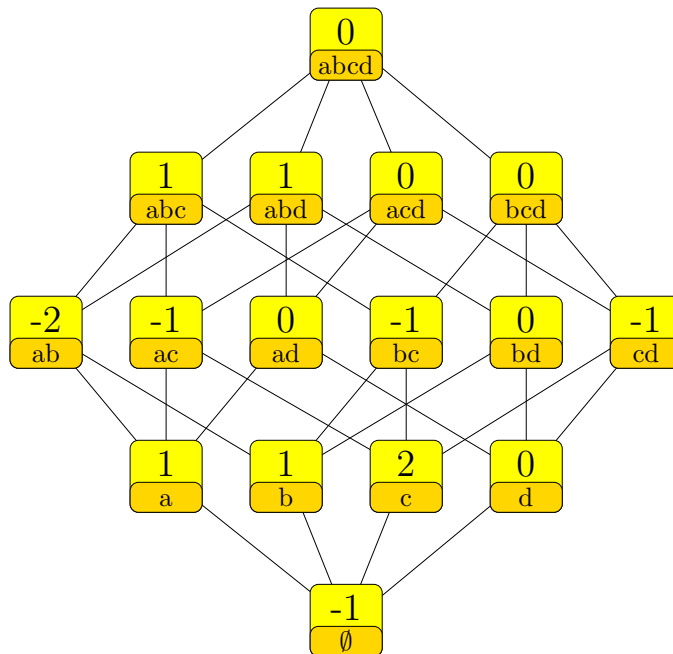
1.16.10.3 Differential imset (200)



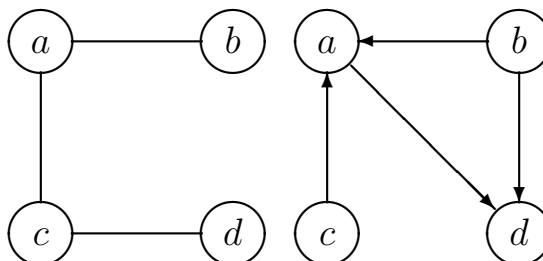
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{c\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 & = -u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



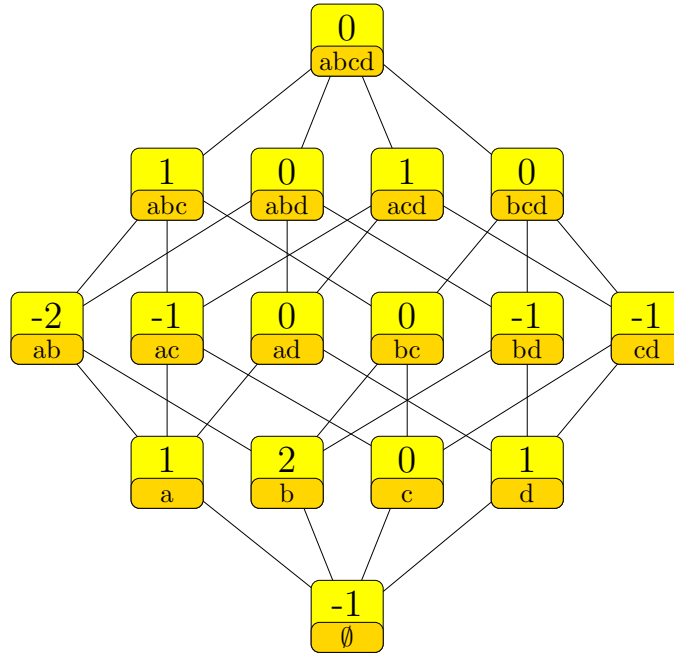
1.16.10.4 Differential imset (201)



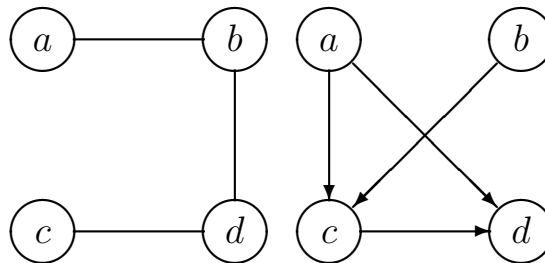
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} + 2\delta_{\{c\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle b,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



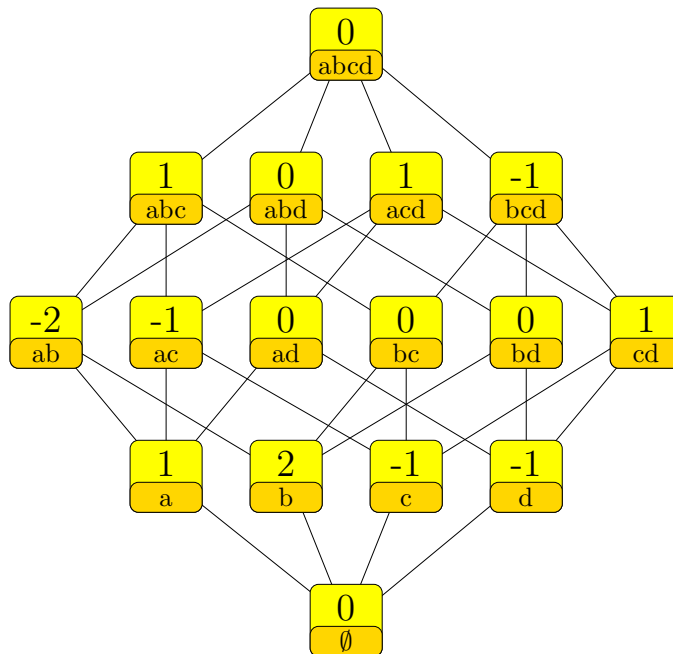
1.16.10.5 Differential imset (202)



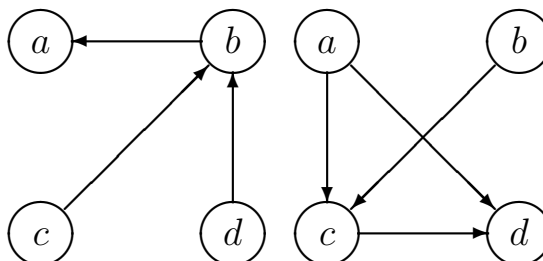
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 2\delta_{\{b\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 & = -u_{\langle a,b|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} + u_{\langle b,c|d \rangle} \\
 & = (\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



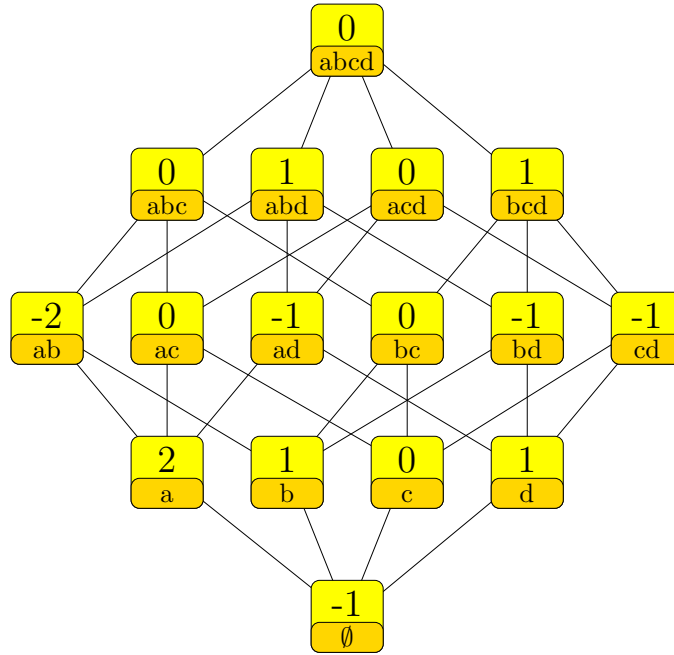
1.16.10.6 Differential imset (203)



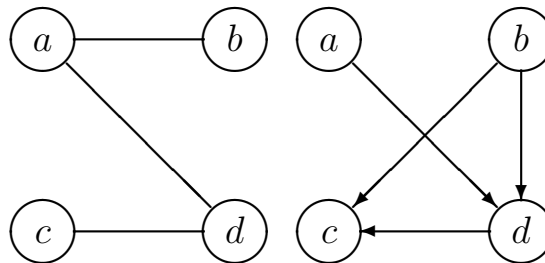
$$\begin{aligned}
 & \delta_{\{a\}} + 2\delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



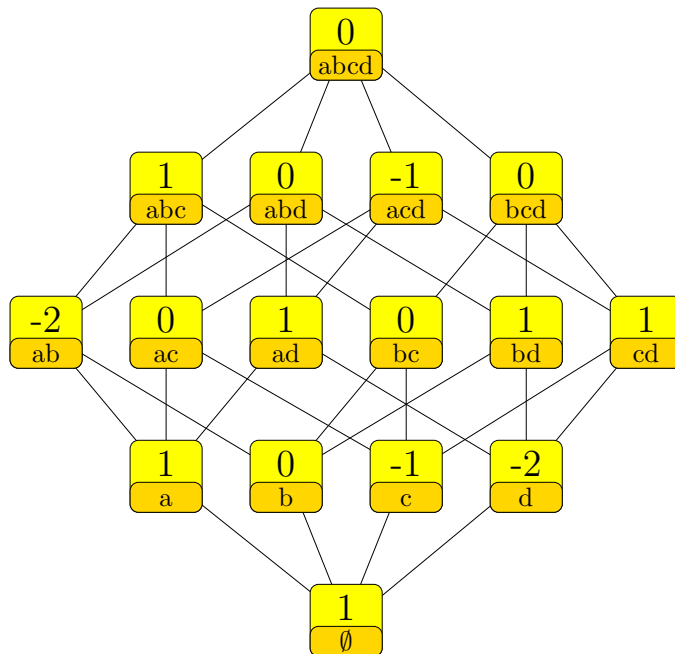
1.16.10.7 Differential imset (204)



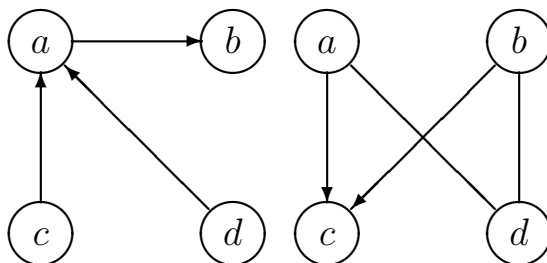
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 & = -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle b,c|d \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



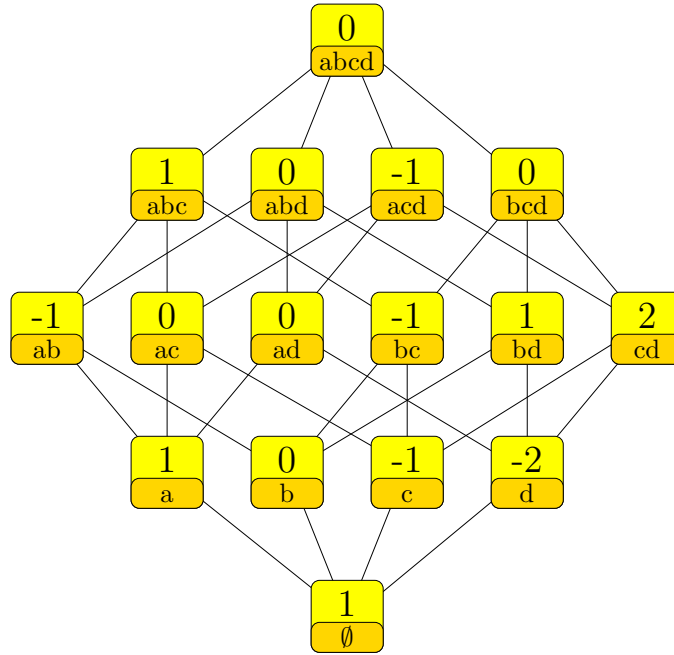
1.16.10.8 Differential imset (205)



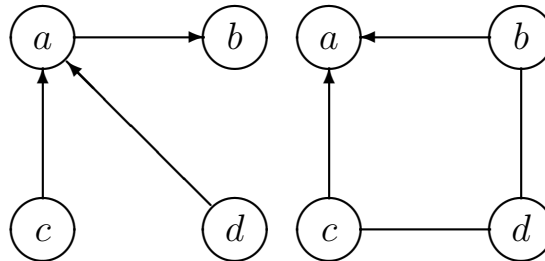
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



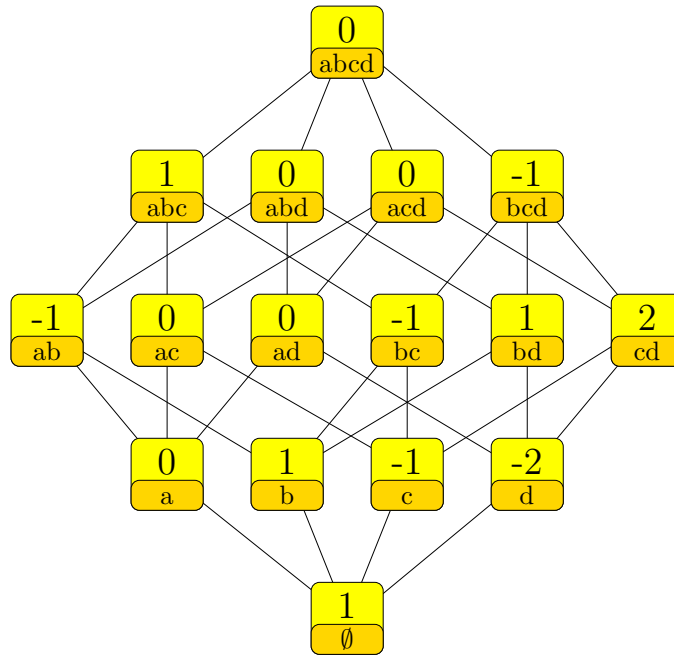
1.16.10.9 Differential imset (206)



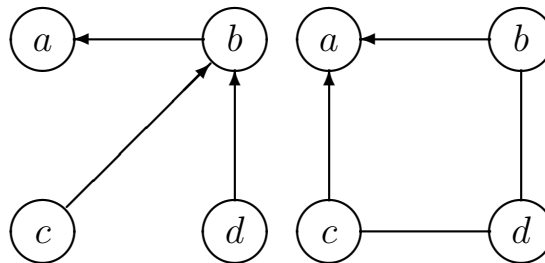
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + 2\delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.16.10.10 Differential imset (207)

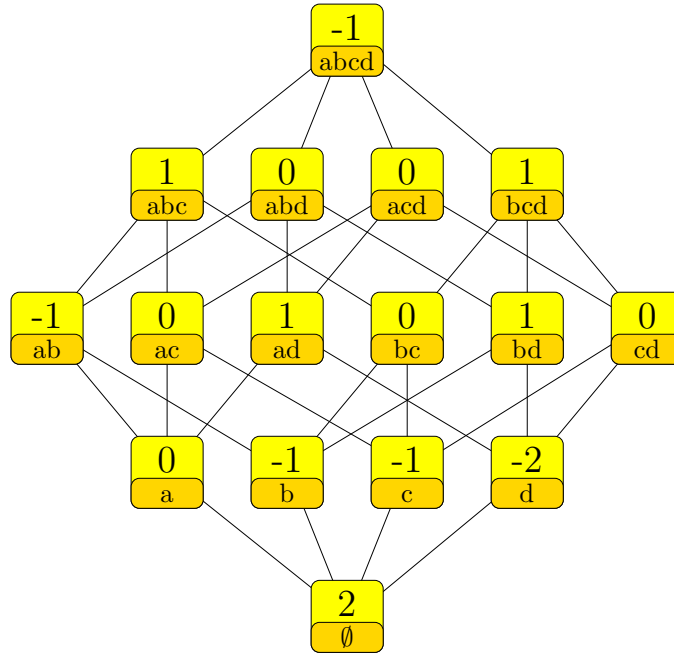


$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + 2\delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

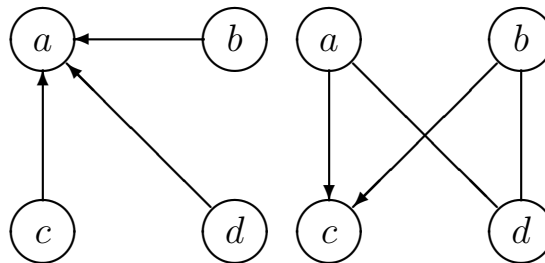




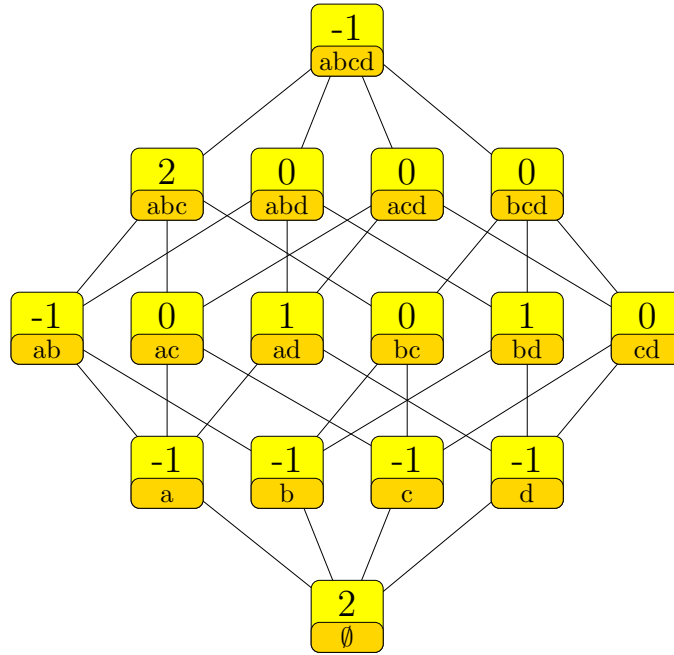
1.16.10.11 Differential imset (208)



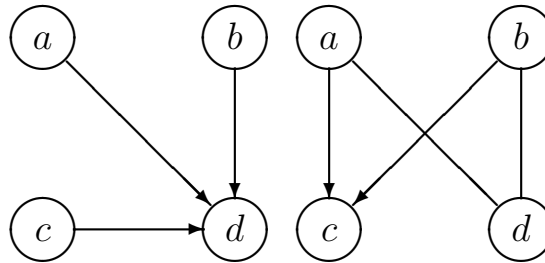
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} - u_{\langle a,b|d \rangle} + u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



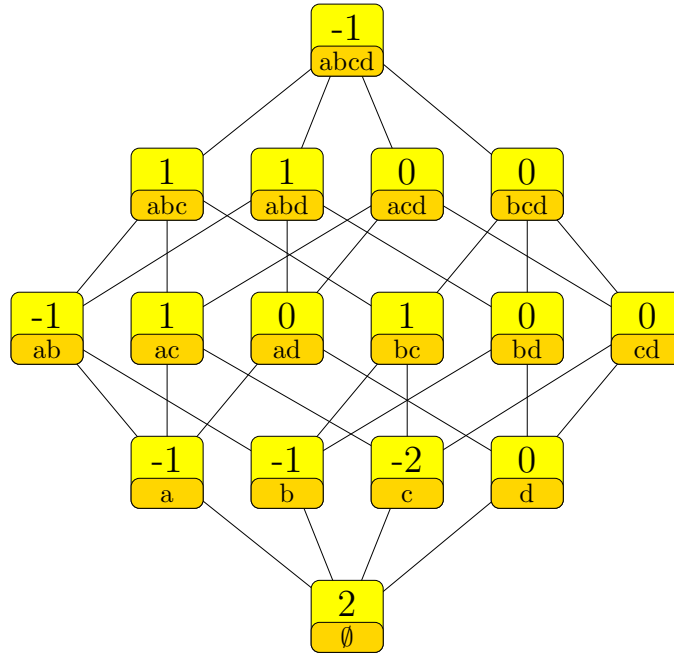
1.16.10.12 Differential imset (209)



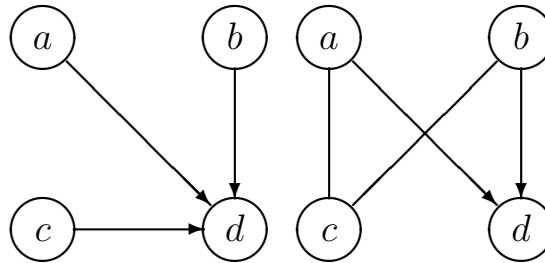
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + 2\delta_{\{a,b,c\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



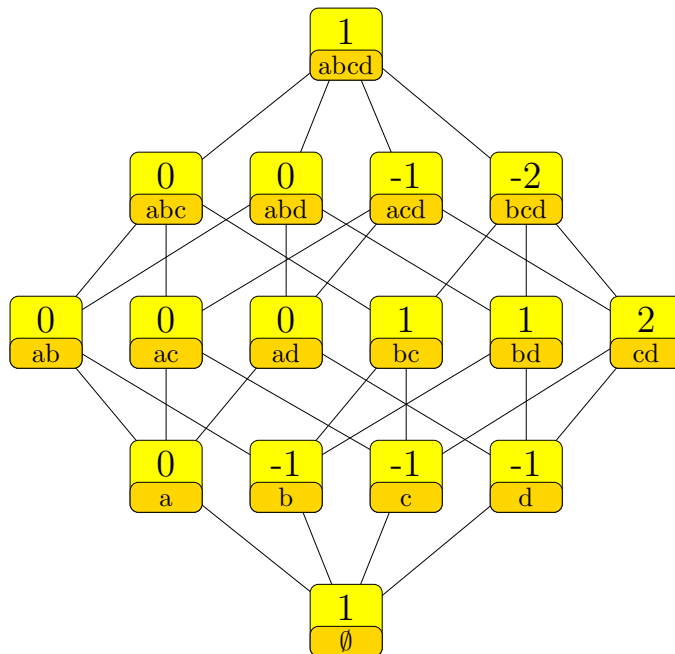
1.16.10.13 Differential imset (210)



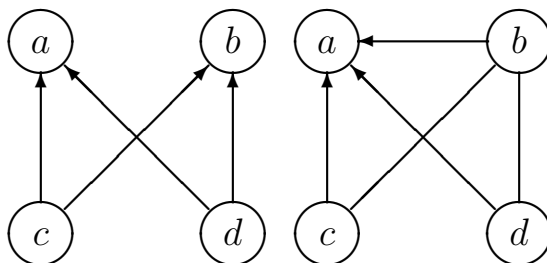
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset\rangle} + u_{\langle b,c|\emptyset\rangle} - u_{\langle c,d|ab\rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



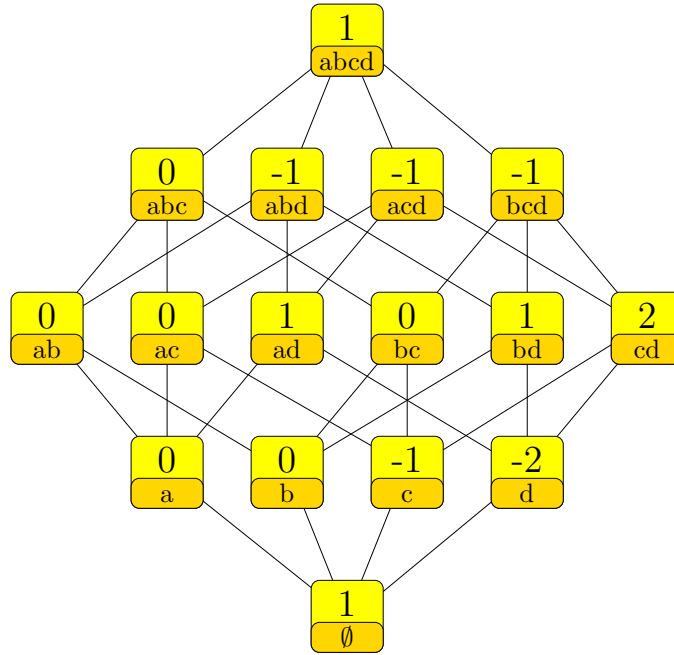
1.16.10.14 Differential imset (211)



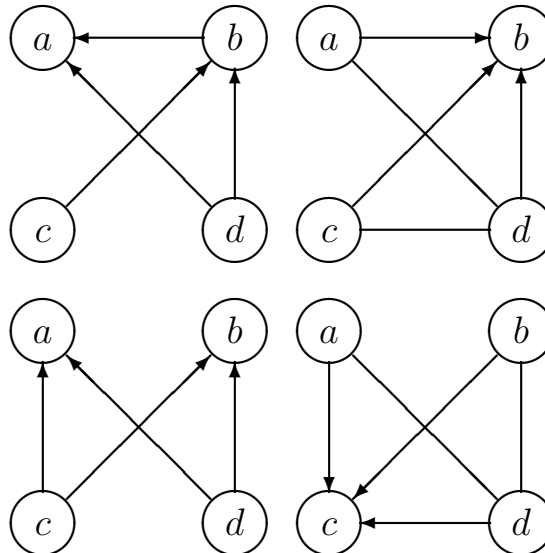
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset\rangle} + u_{\langle a,b|cd\rangle} - u_{\langle c,d|b\rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



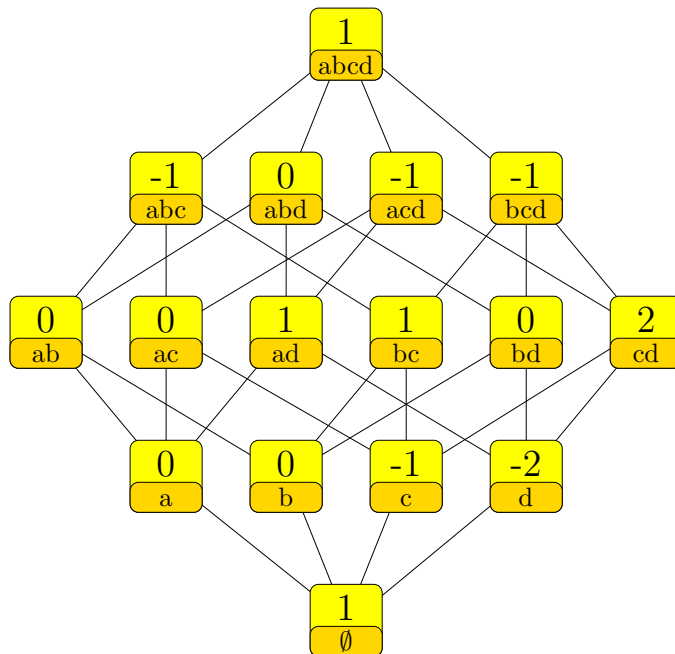
1.16.10.15 Differential imset (212)



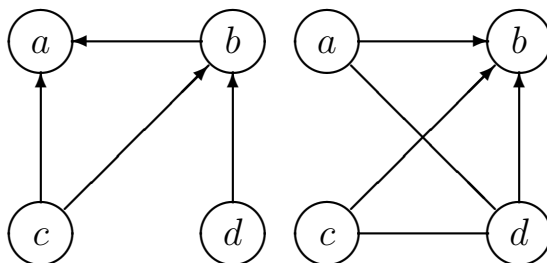
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - 2\delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



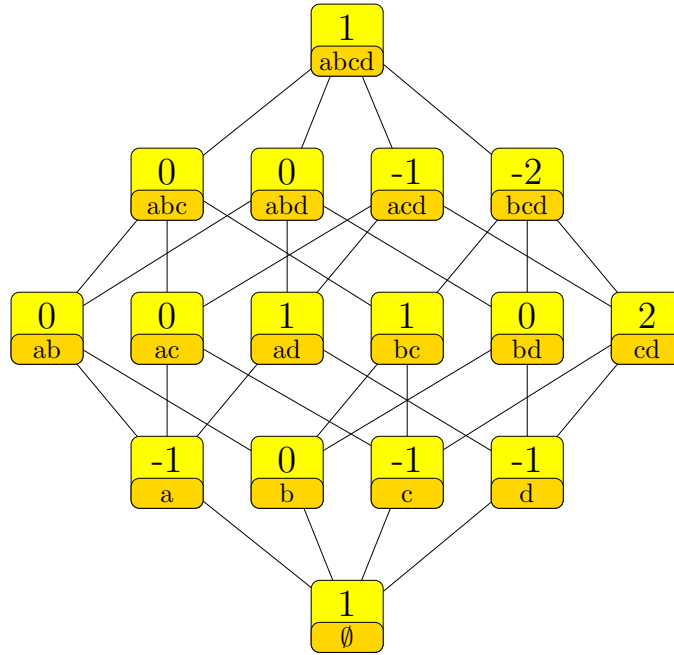
1.16.10.16 Differential imset (213)



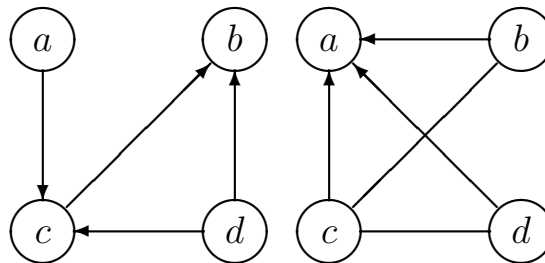
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - 2\delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + 2\delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



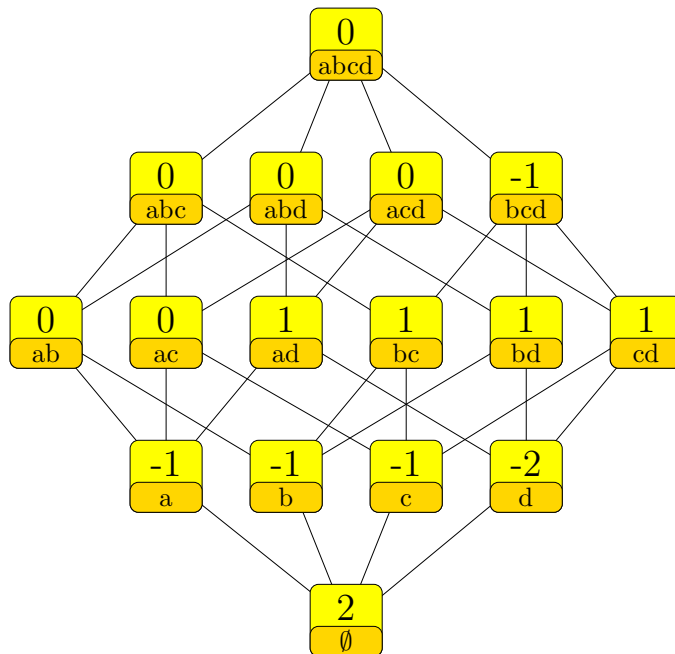
1.16.10.17 Differential imset (214)



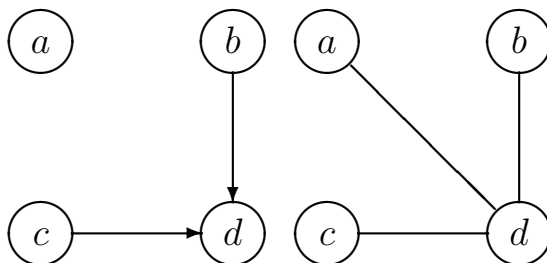
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



1.16.10.18 Differential imset (215)

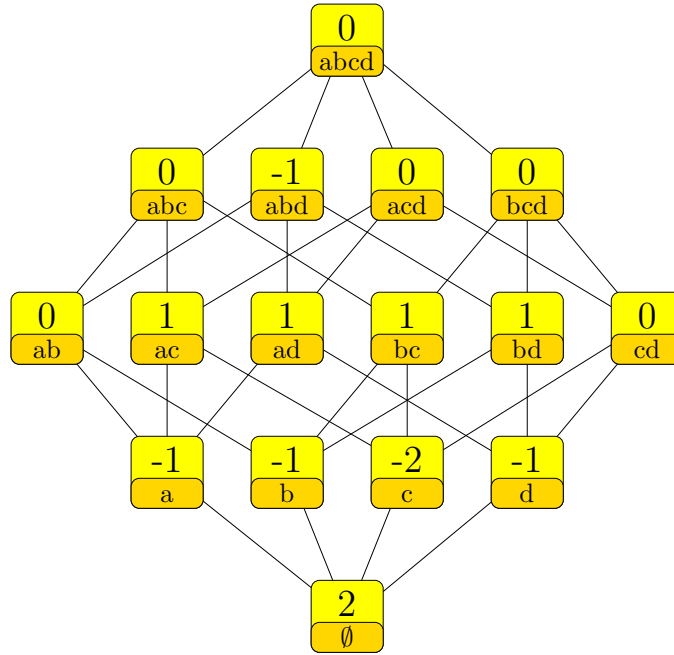


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle b,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

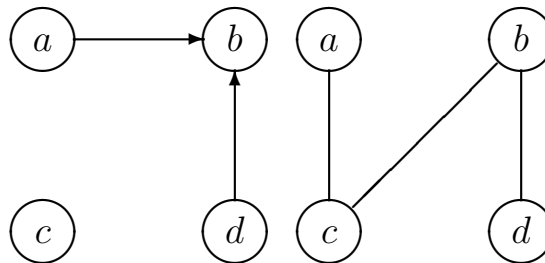




1.16.10.19 Differential imset (216)



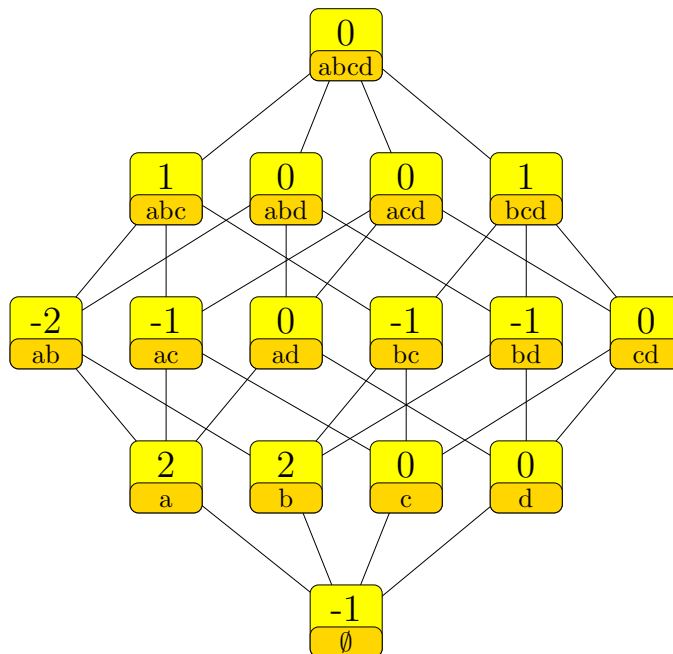
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle a,b|d \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



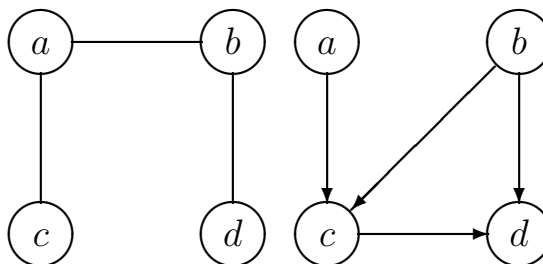
### 1.18 Squared Euclidean length 18

#### 1.18.9 Number of nonzero values 9

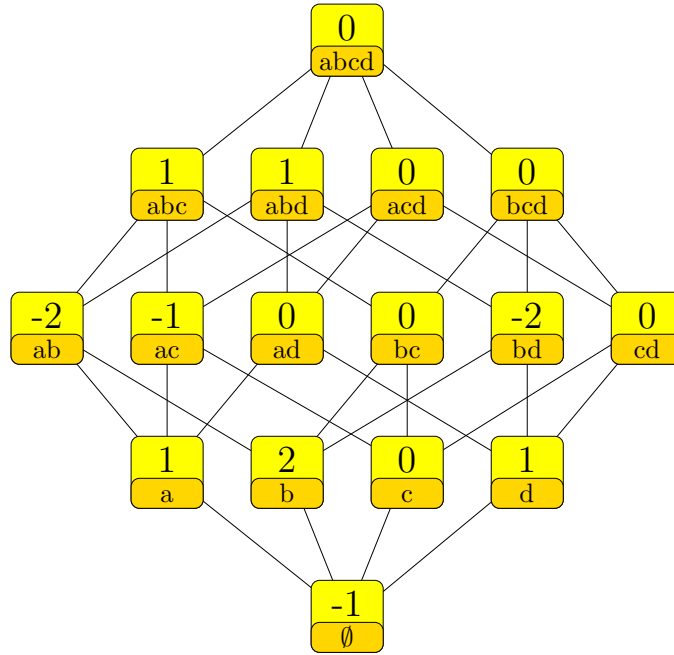
##### 1.18.9.1 Differential imset (217)



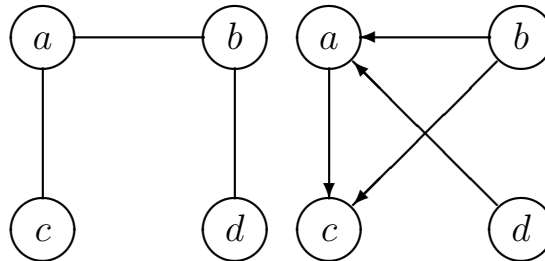
$$\begin{aligned}
 & -\delta_\emptyset + 2\delta_{\{a\}} + 2\delta_{\{b\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle c,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



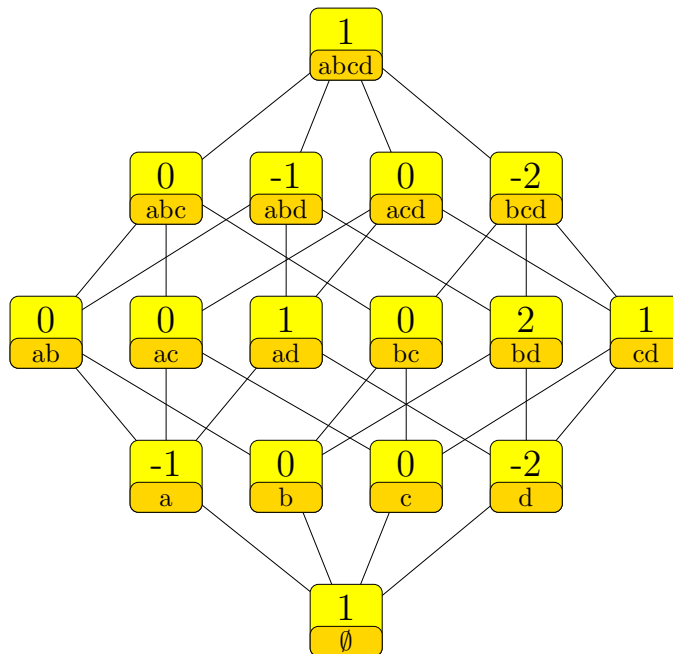
1.18.9.2 Differential imset (218)



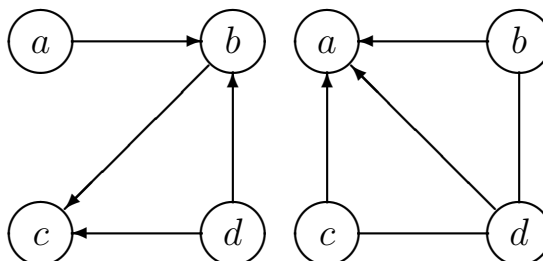
$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 2\delta_{\{b\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} - 2\delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 & = -u_{\langle b,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,d|b \rangle} \\
 & = (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



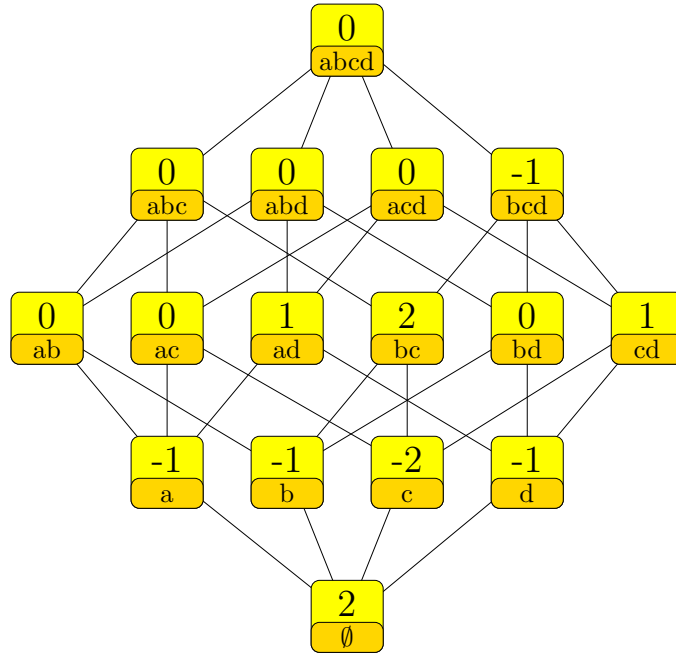
1.18.9.3 Differential imset (219)



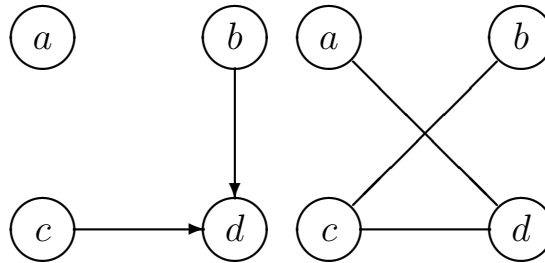
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - 2\delta_{\{d\}} + \delta_{\{a,d\}} + 2\delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



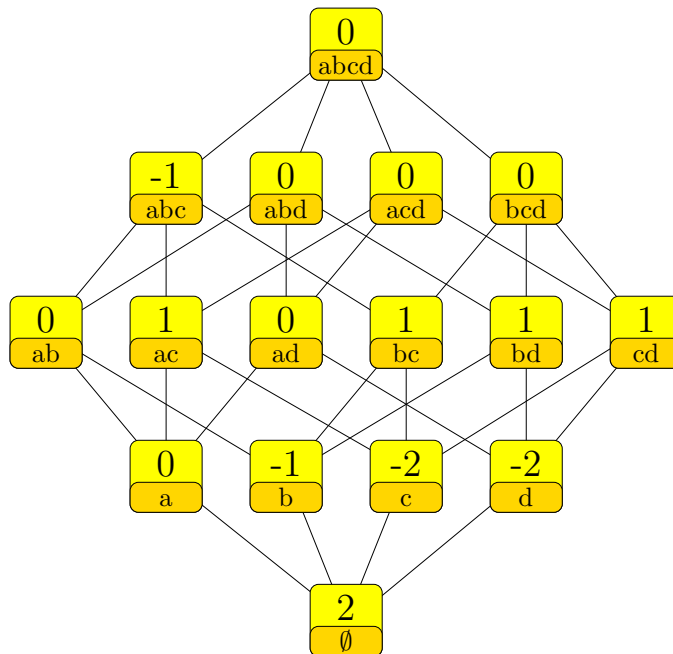
1.18.9.4 Differential imset (220)



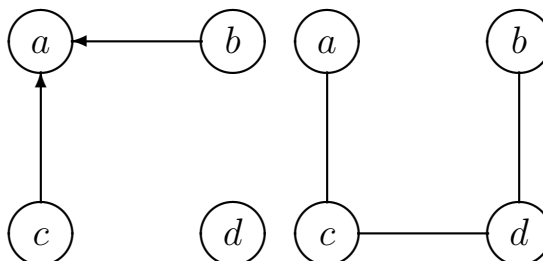
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + 2\delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle b,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



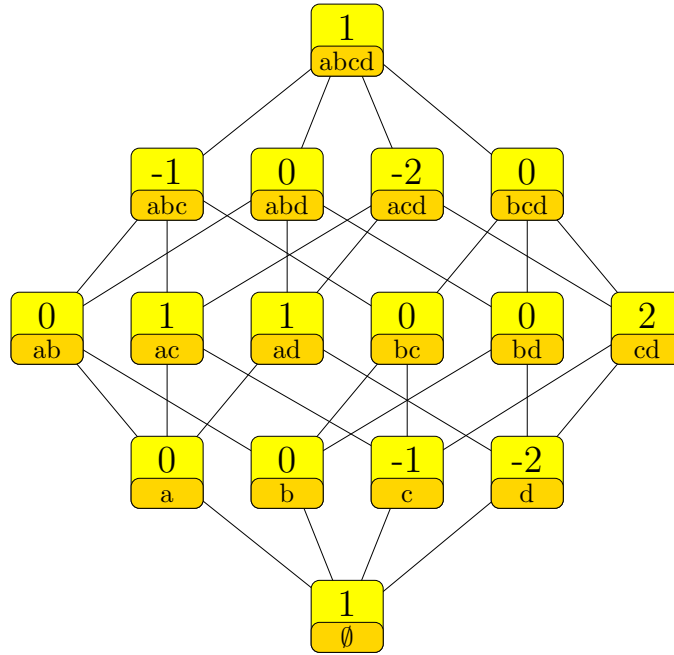
1.18.9.5 Differential imset (221)



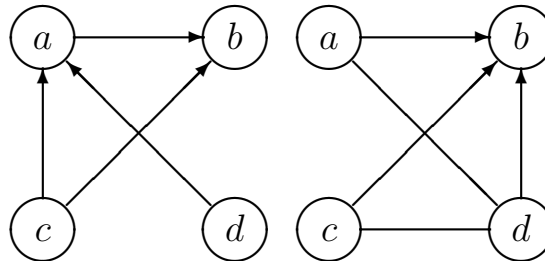
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - 2\delta_{\{c\}} - 2\delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} - u_{\langle a,b|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.18.9.6 Differential imset (222)



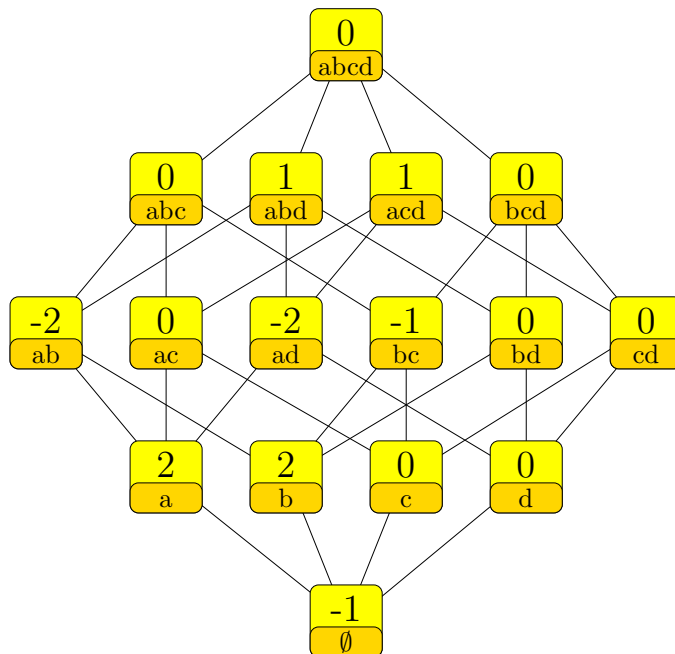
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - 2\delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,b,c\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



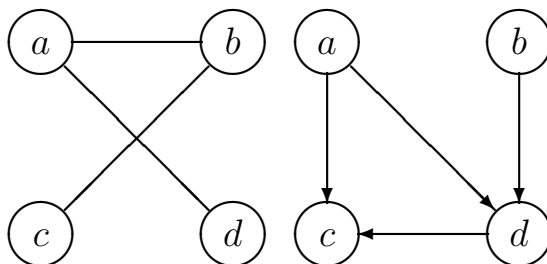
## 1.20 Squared Euclidean length 20

### 1.20.8 Number of nonzero values 8

#### 1.20.8.1 Differential imset (223)

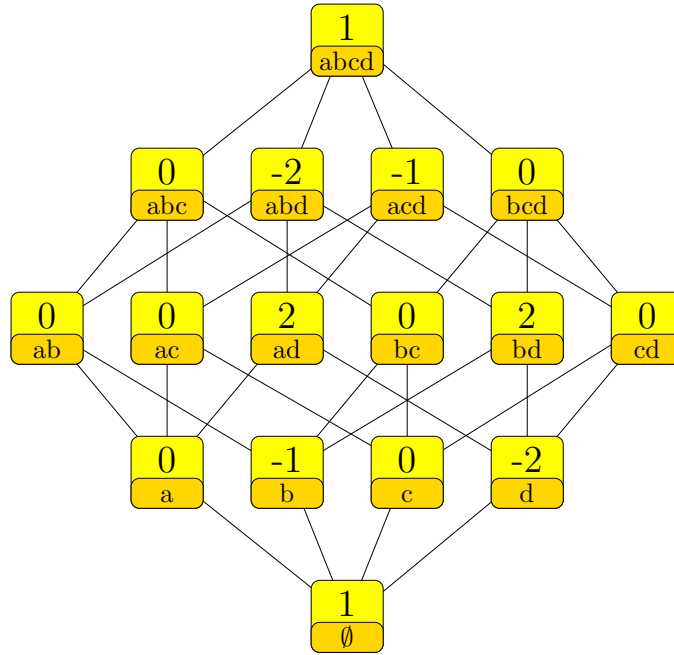


$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + 2\delta_{\{b\}} - 2\delta_{\{a,b\}} - 2\delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

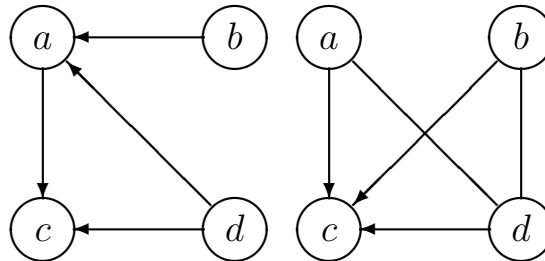




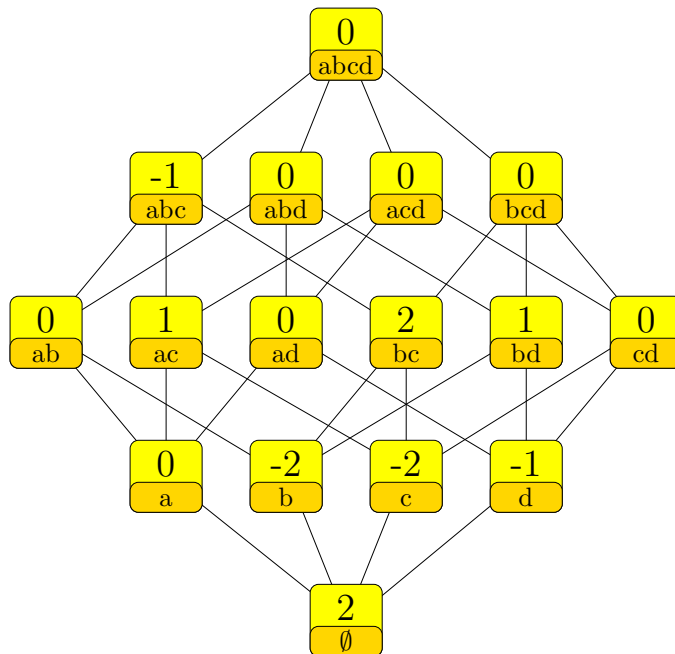
1.20.8.2 Differential imset (224)



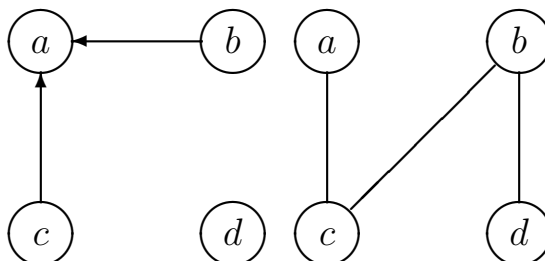
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - 2\delta_{\{d\}} + 2\delta_{\{a,d\}} + 2\delta_{\{b,d\}} - 2\delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle b,c|ad \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



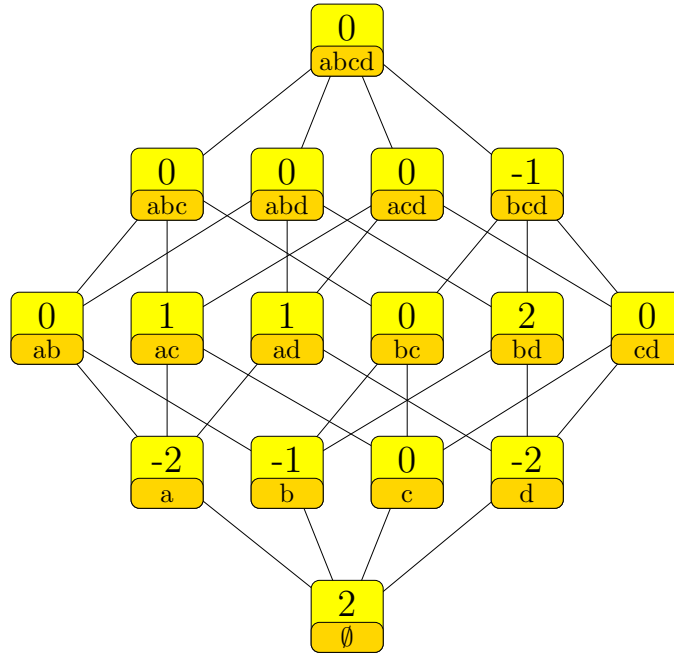
1.20.8.3 Differential imset (225)



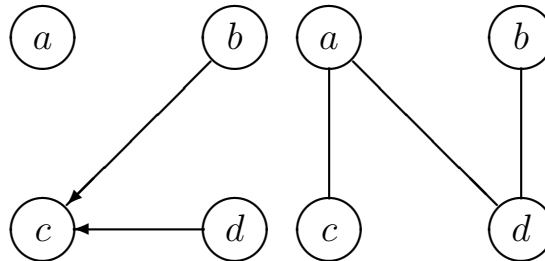
$$\begin{aligned}
 &+2\delta_\emptyset - 2\delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + 2\delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle a,b|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.20.8.4 Differential imset (226)

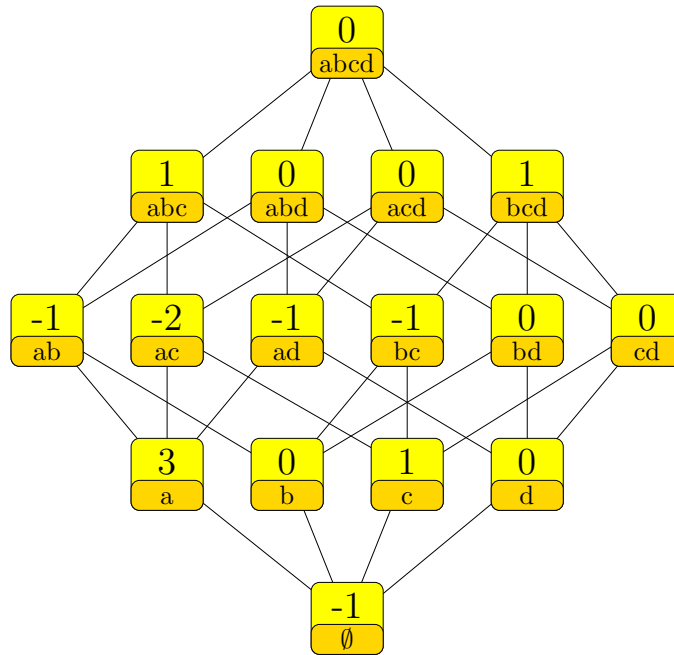


$$\begin{aligned}
 &+2\delta_\emptyset - 2\delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + 2\delta_{\{b,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

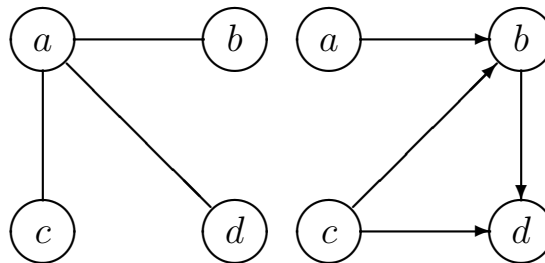


1.20.9 Number of nonzero values 9

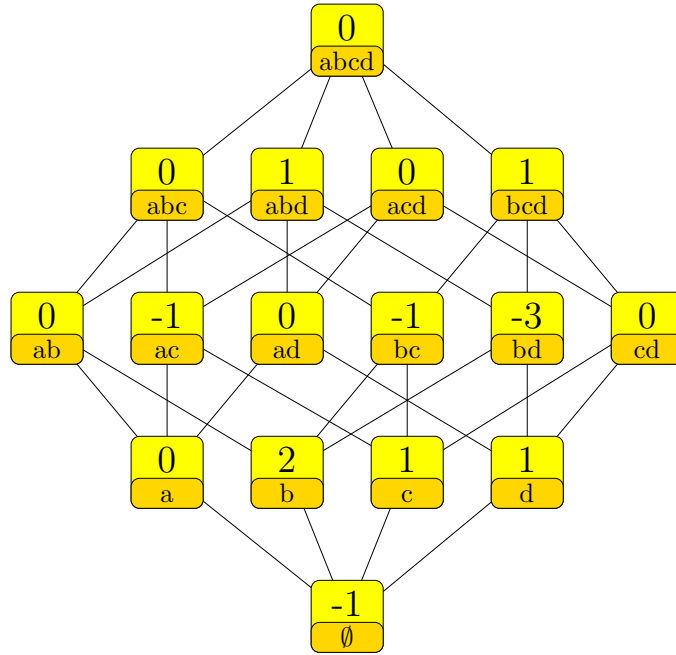
1.20.9.1 Differential imset (227)



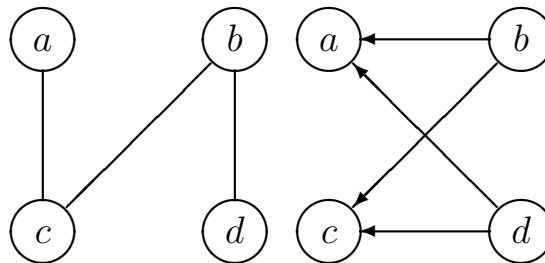
$$\begin{aligned}
 & -\delta_{\emptyset} + 3\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - 2\delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset\rangle} + u_{\langle c,d|ab\rangle} - u_{\langle a,d|bc\rangle} + u_{\langle b,c|a\rangle} + u_{\langle b,d|a\rangle} \\
 &= (+2\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



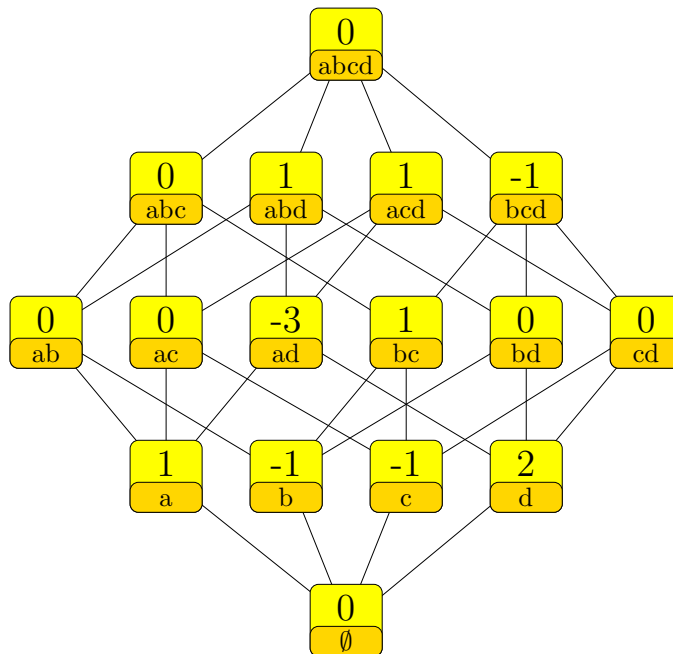
1.20.9.2 Differential imset (228)



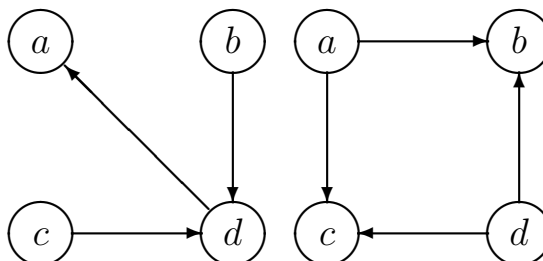
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{b\}} + \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - 3\delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle a,d|b \rangle} + u_{\langle a,b|c \rangle} \\
 &= (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + 2\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.20.9.3 Differential imset (229)



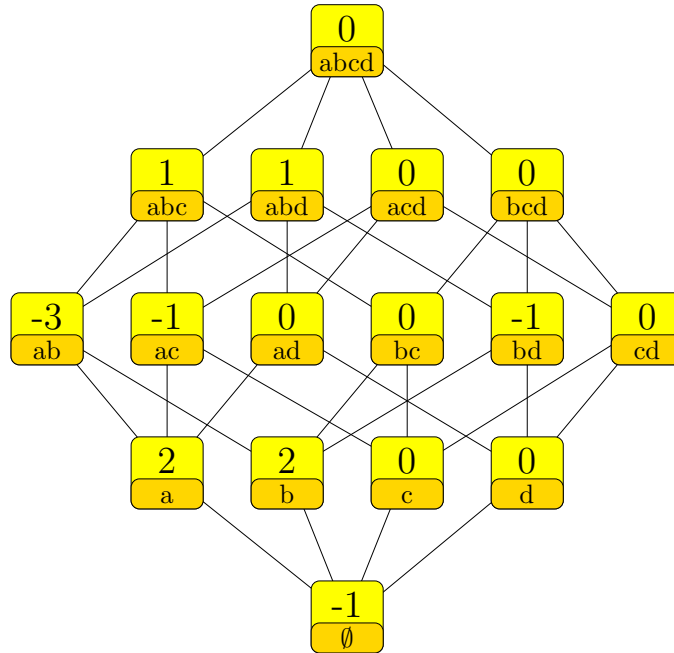
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + 2\delta_{\{d\}} - 3\delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} - u_{\langle b,c|ad \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + 2\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



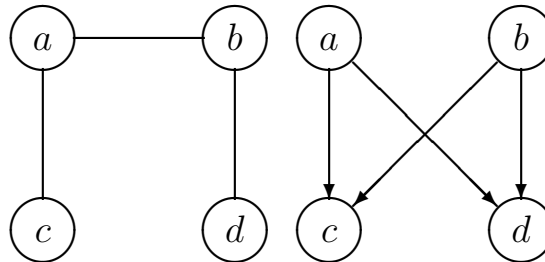
### 1.22 Squared Euclidean length 22

#### 1.22.8 Number of nonzero values 8

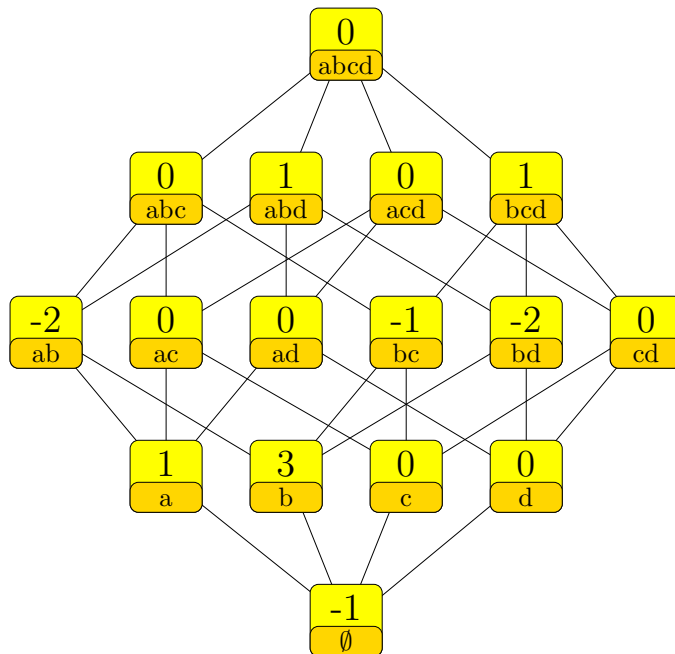
##### 1.22.8.1 Differential imset (230)



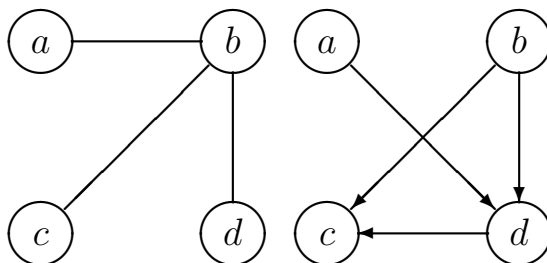
$$\begin{aligned}
 & -\delta_{\emptyset} + 2\delta_{\{a\}} + 2\delta_{\{b\}} - 3\delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



1.22.8.2 Differential imset (231)

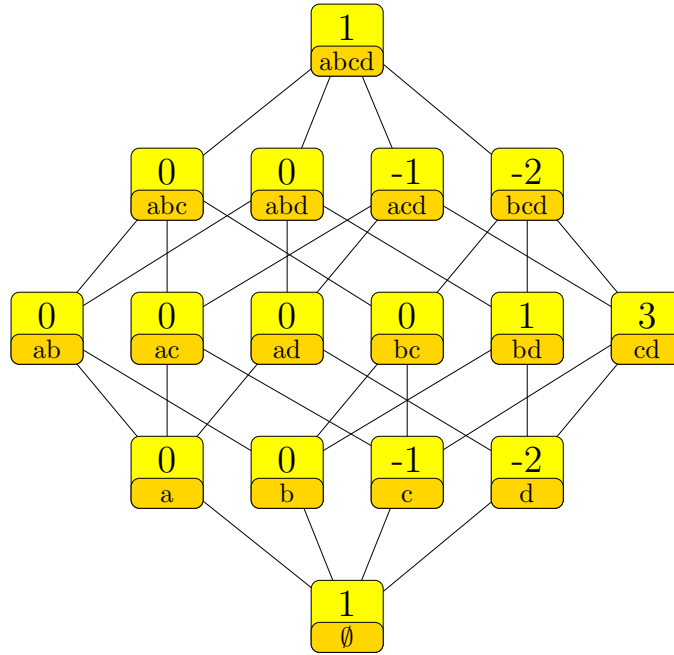


$$\begin{aligned}
 & -\delta_{\emptyset} + \delta_{\{a\}} + 3\delta_{\{b\}} - 2\delta_{\{a,b\}} - \delta_{\{b,c\}} - 2\delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 & = -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|b \rangle} + u_{\langle c,d|b \rangle} \\
 & = (+2\delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 & \quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

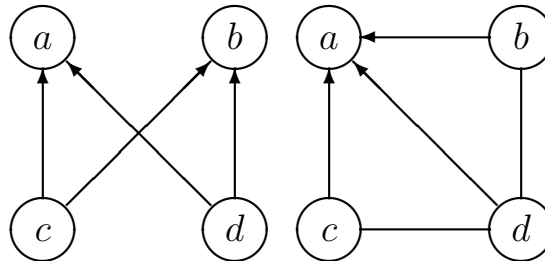




1.22.8.3 Differential imset (232)



$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - 2\delta_{\{d\}} + \delta_{\{b,d\}} + 3\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$





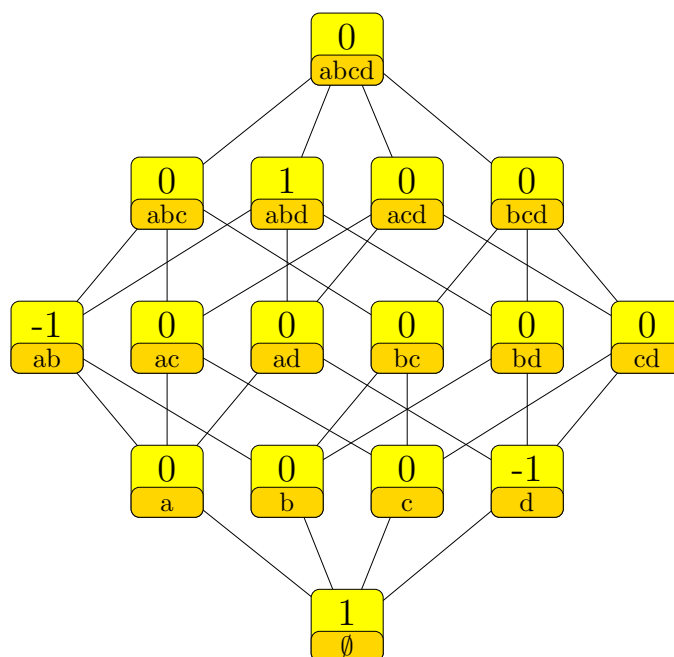
## Chapter 2

# Degree difference 2

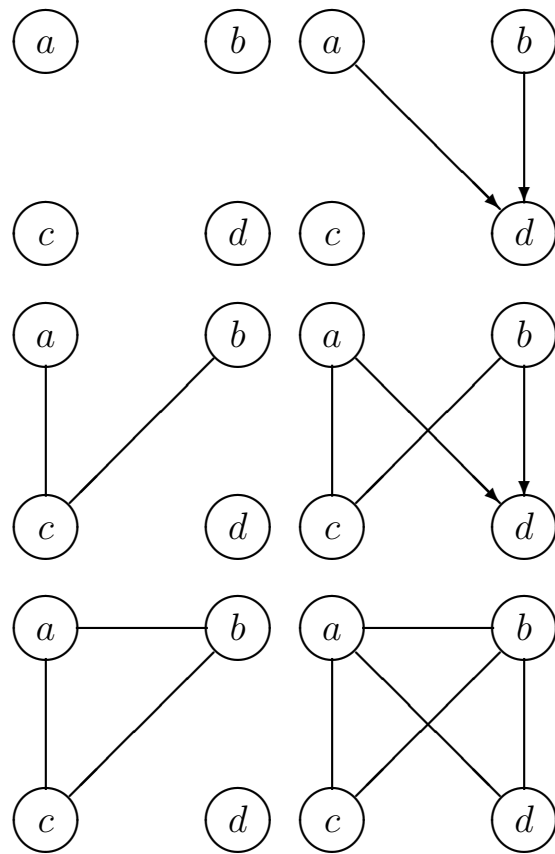
### 2.4 Squared Euclidean length 4

#### 2.4.4 Number of nonzero values 4

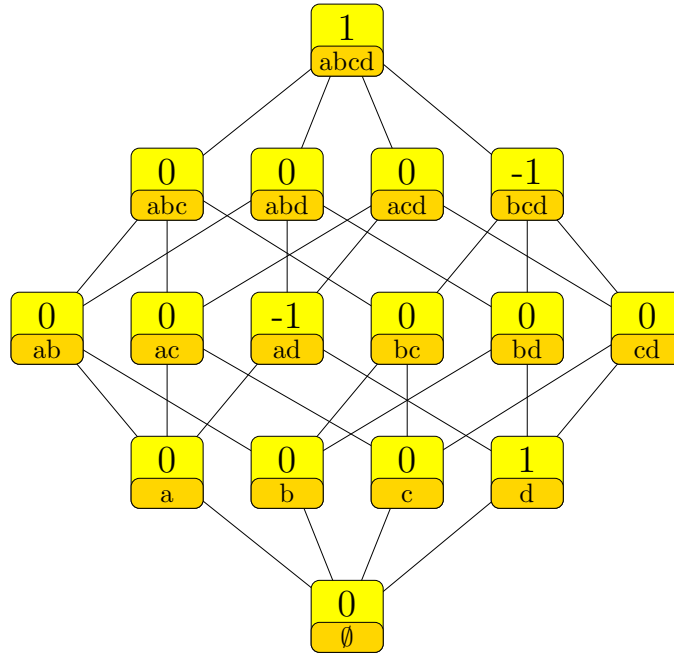
##### 2.4.4.1 Differential imset (233)



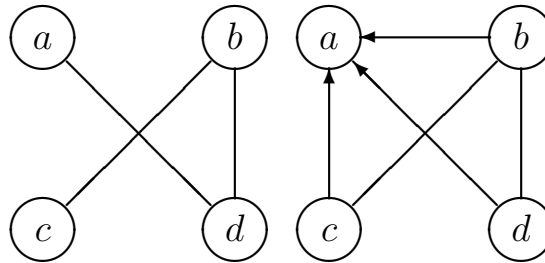
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (+3\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.4.4.2 Differential imset (234)



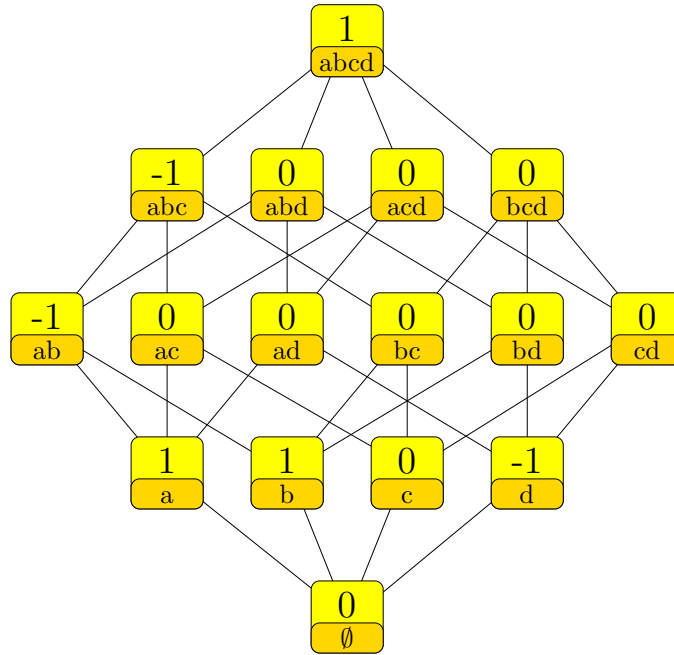
$$\begin{aligned}
 & \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|bd \rangle} + u_{\langle a,b|d \rangle} \\
 &= (\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



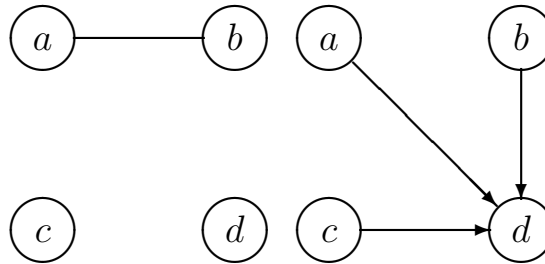
## 2.6 Squared Euclidean length 6

### 2.6.6 Number of nonzero values 6

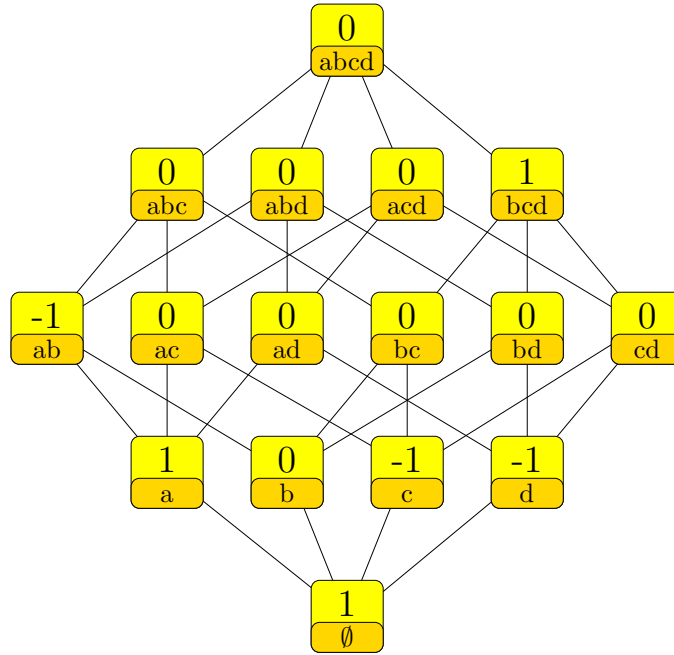
#### 2.6.6.1 Differential inset (235)



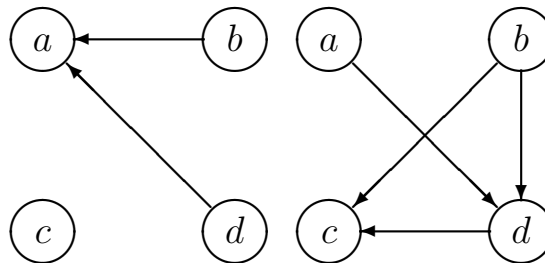
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



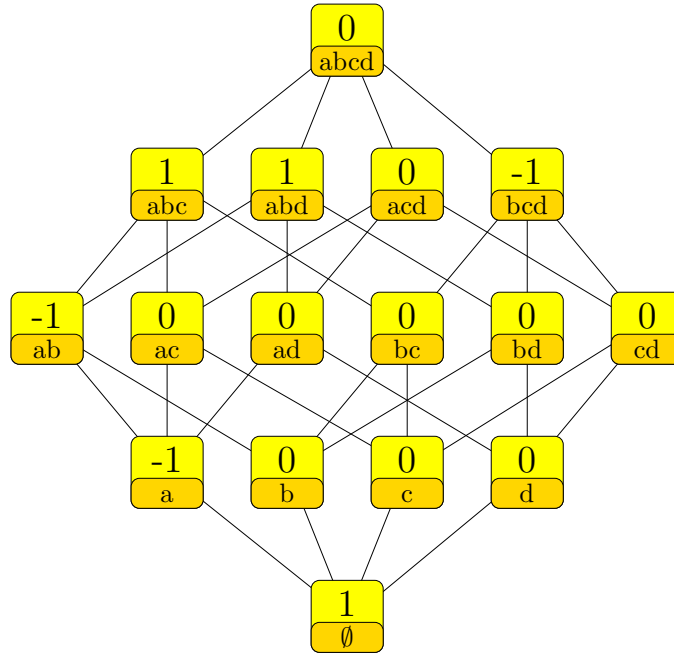
2.6.6.2 Differential inset (236)



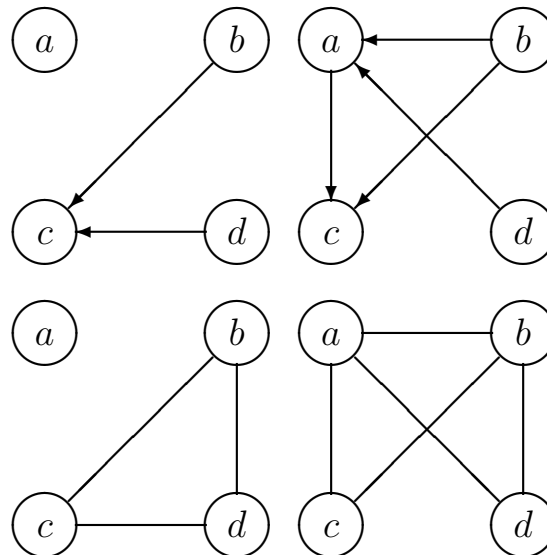
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.6.6.3 Differential imset (237)

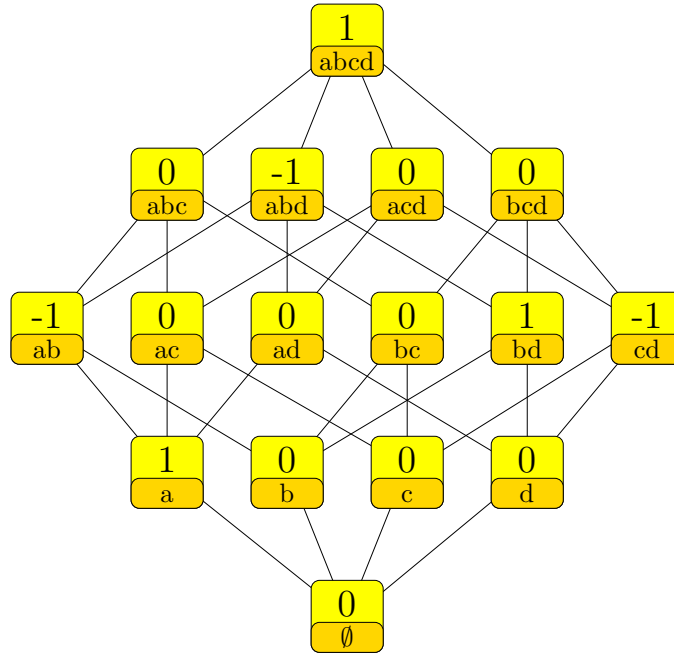


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

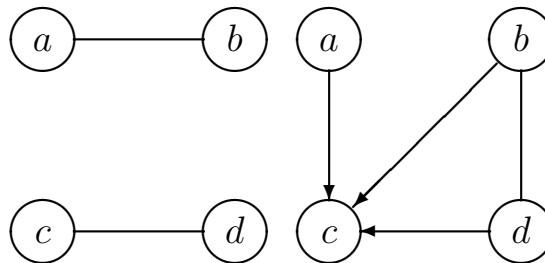




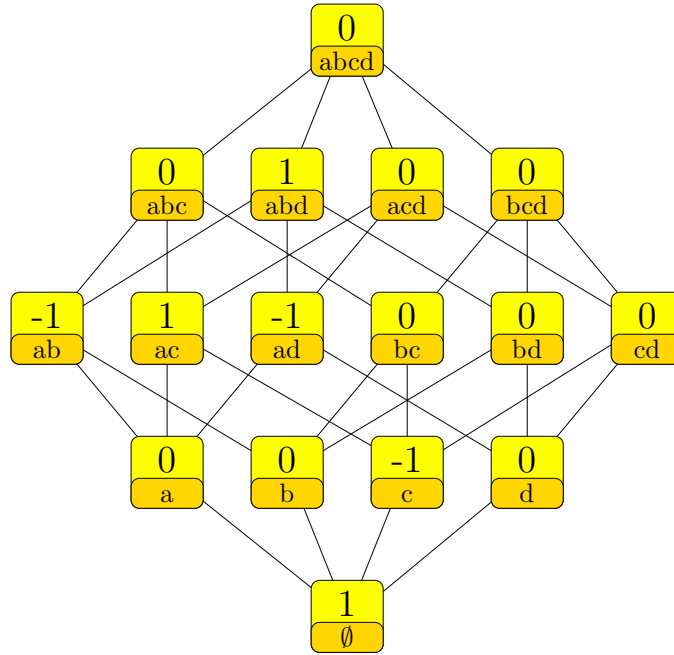
2.6.6.4 Differential imset (238)



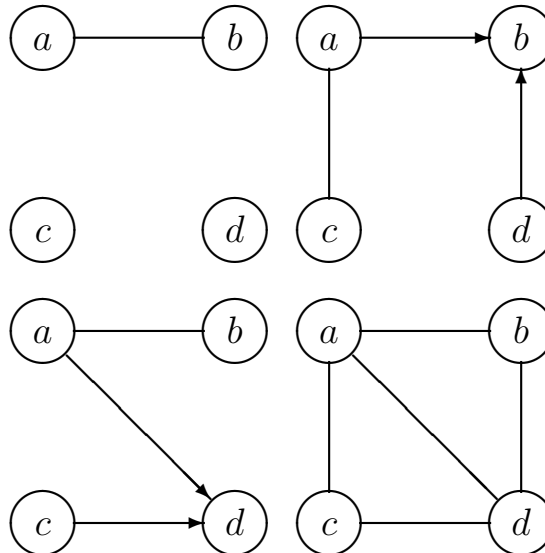
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



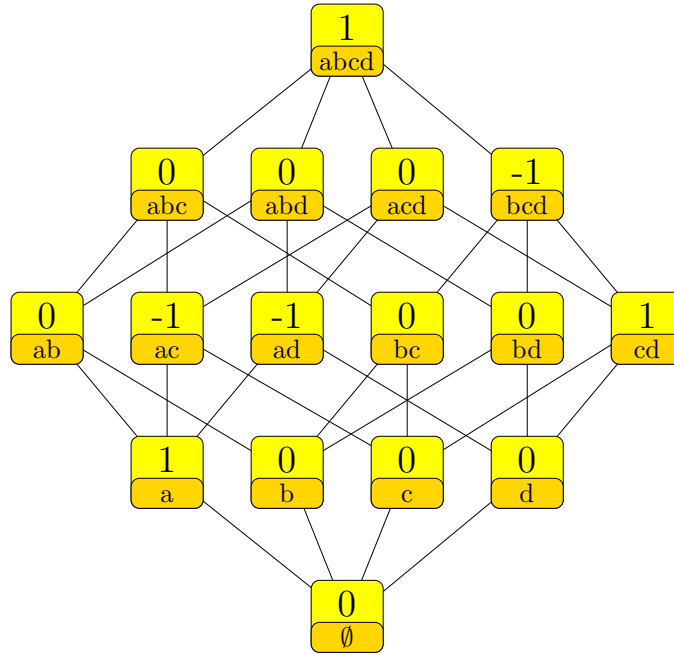
2.6.6.5 Differential inset (239)



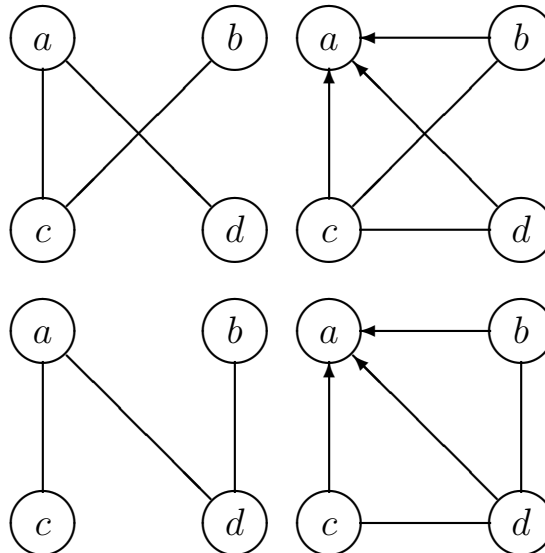
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



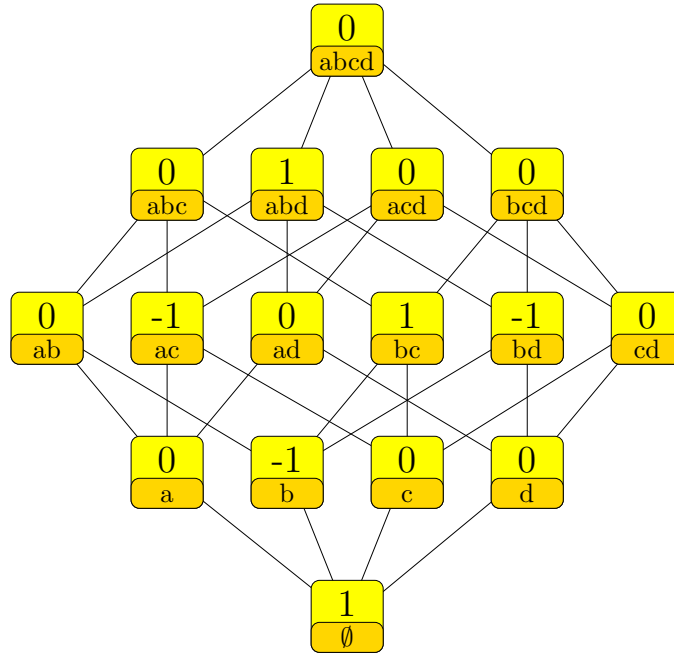
2.6.6.6 Differential inset (240)



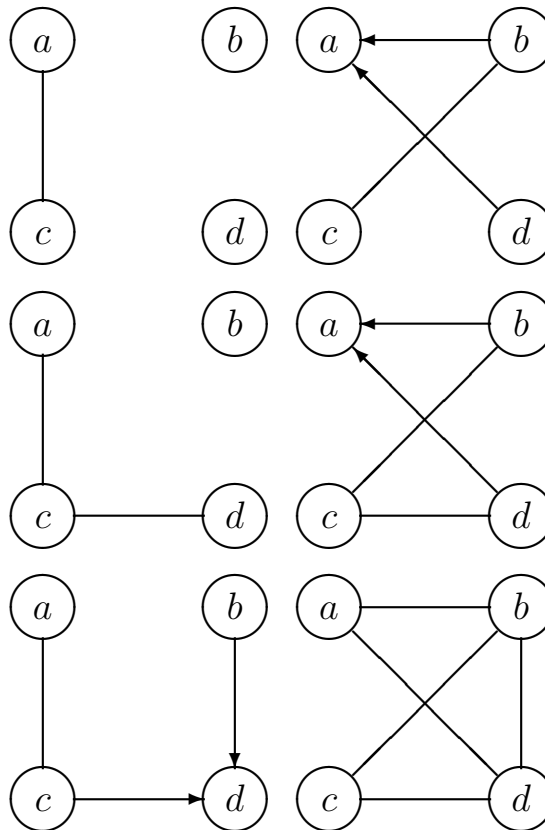
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|cd \rangle} + u_{\langle c,d|a \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



2.6.6.7 Differential inset (241)



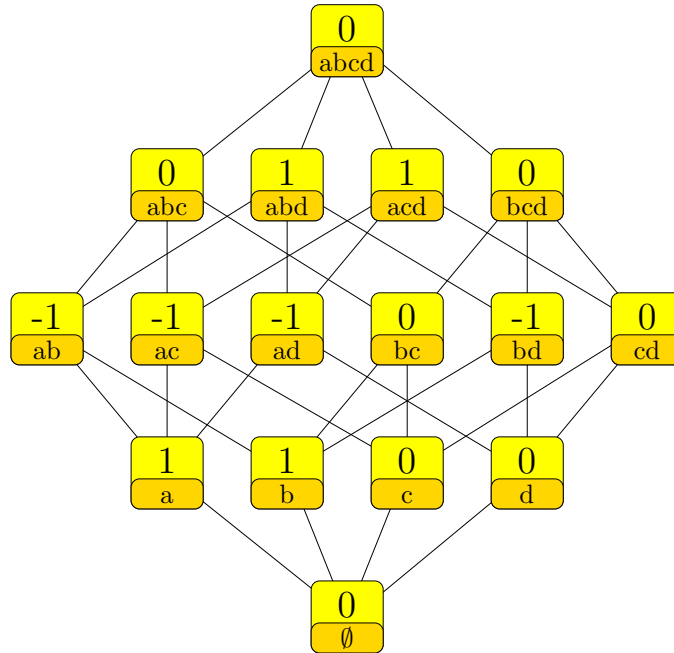
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle a,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



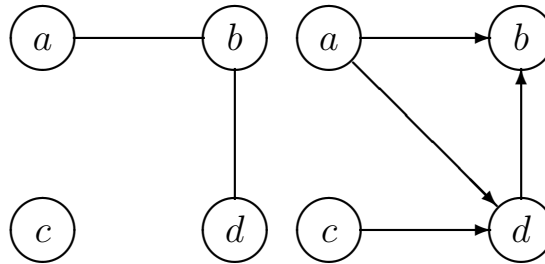
## 2.8 Squared Euclidean length 8

### 2.8.8 Number of nonzero values 8

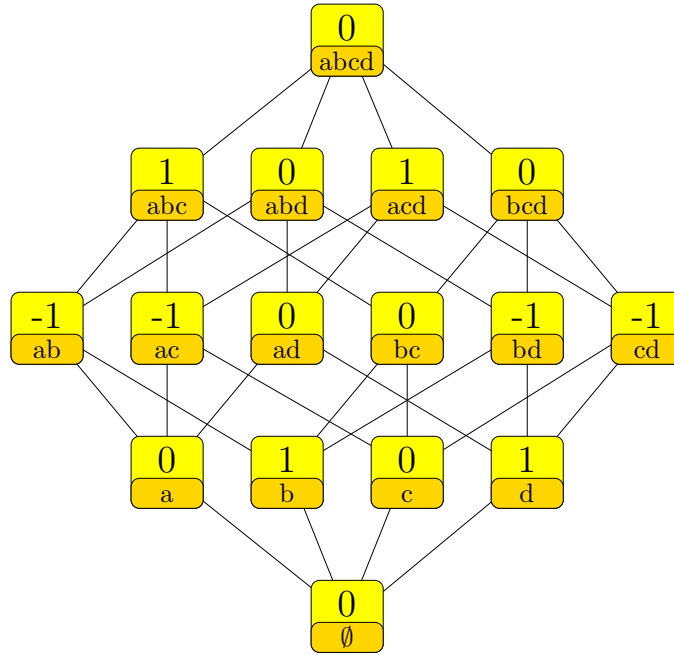
#### 2.8.8.1 Differential inset (242)



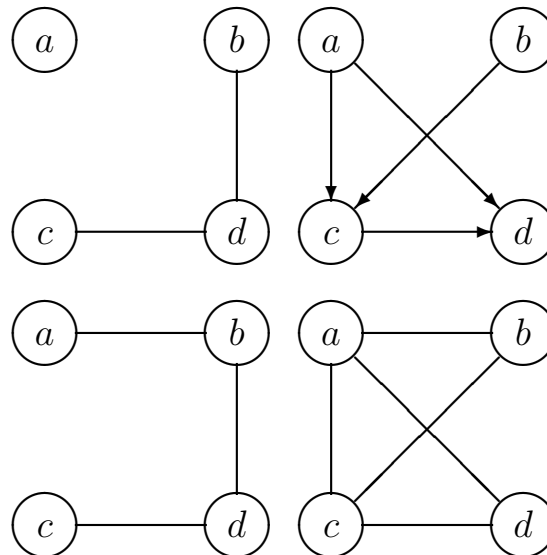
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,d|b \rangle} + u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



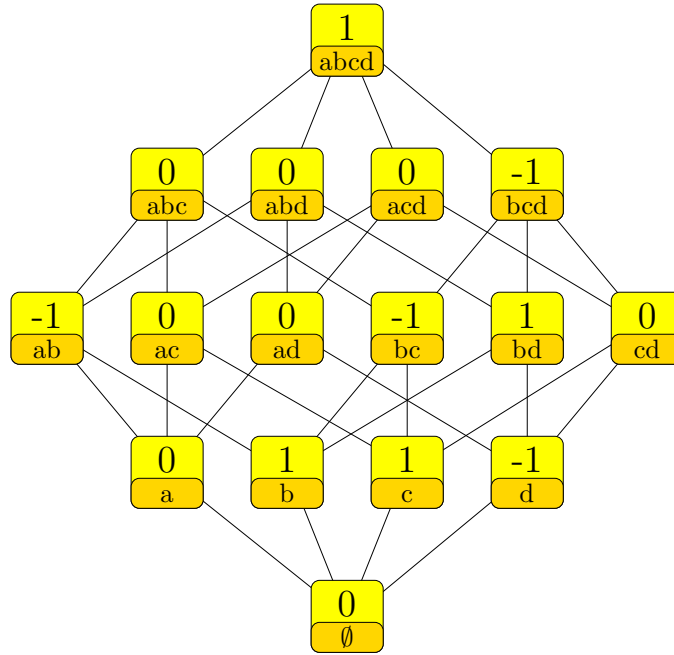
2.8.8.2 Differential imset (243)



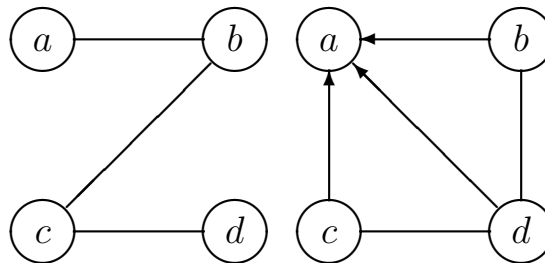
$$\begin{aligned}
 & \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} + u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



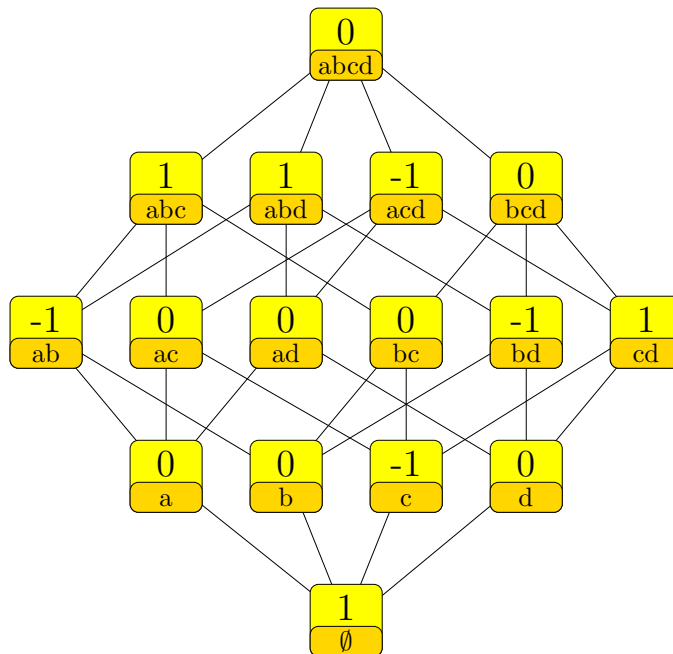
2.8.8.3 Differential inset (244)



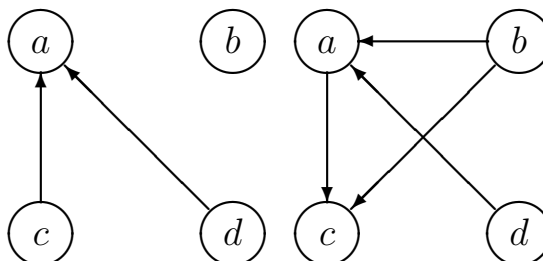
$$\begin{aligned}
 & \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|ac \rangle} + u_{\langle a,c|b \rangle} + u_{\langle a,d|c \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



2.8.8.4 Differential imset (245)

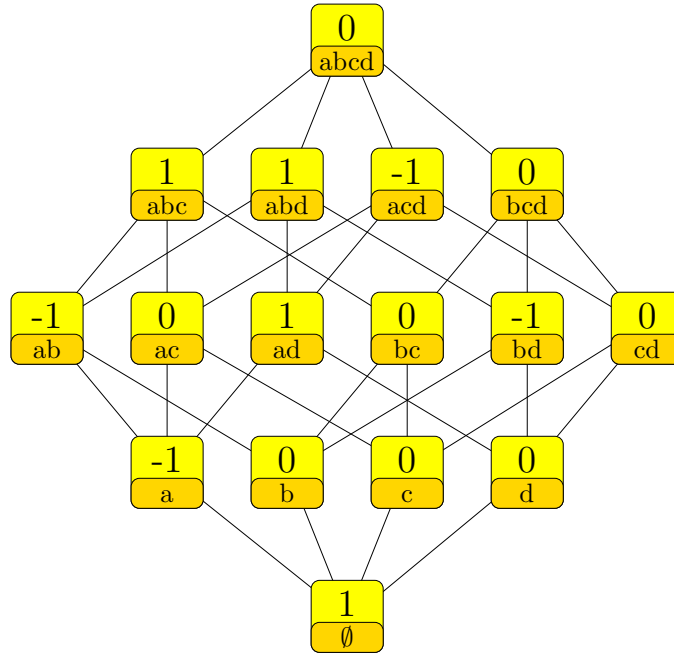


$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle a,b|cd \rangle} + u_{\langle b,c|a \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

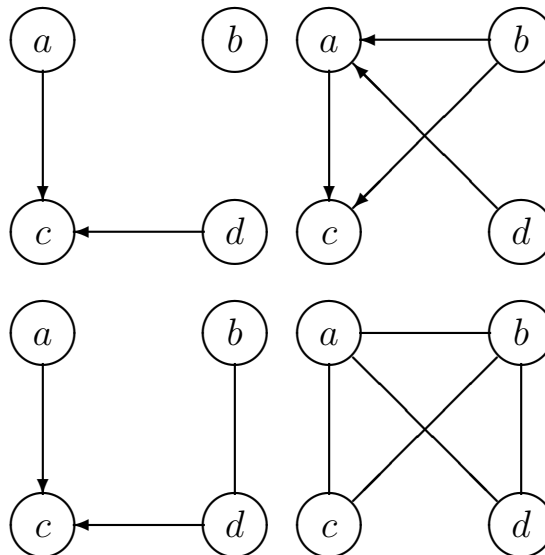




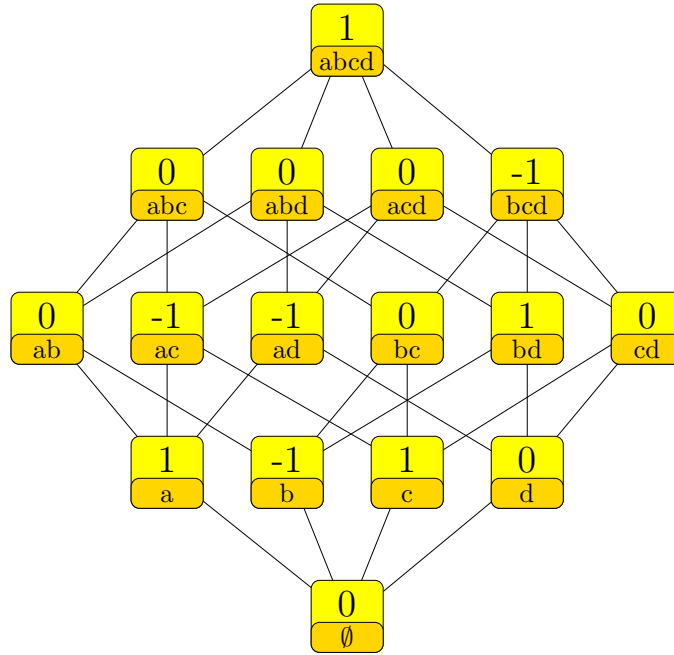
2.8.8.5 Differential inset (246)



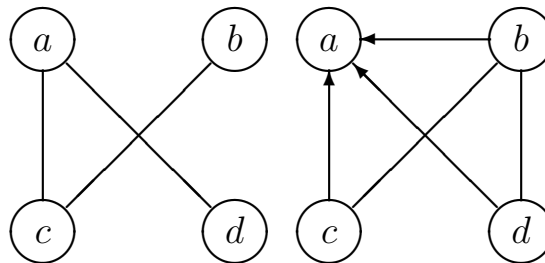
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{a\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



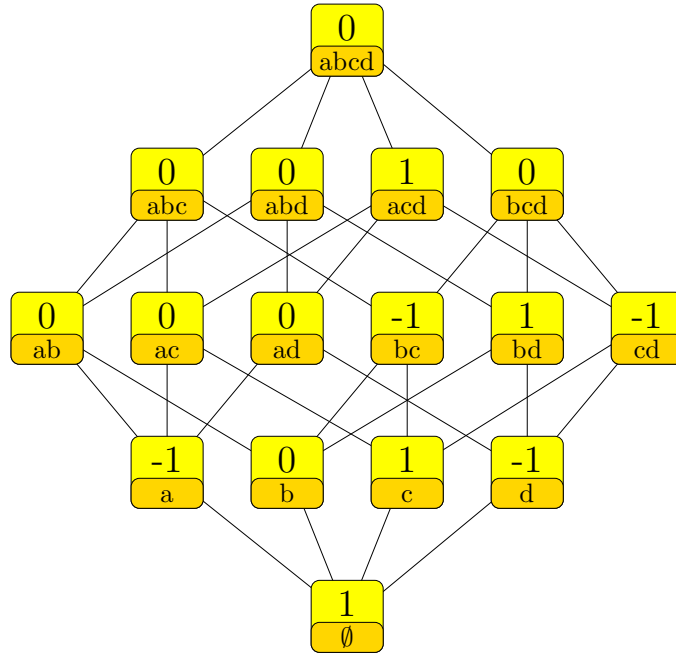
2.8.8.6 Differential imset (247)



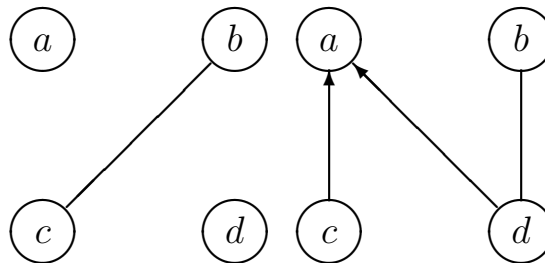
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,b|c \rangle} - u_{\langle c,d|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



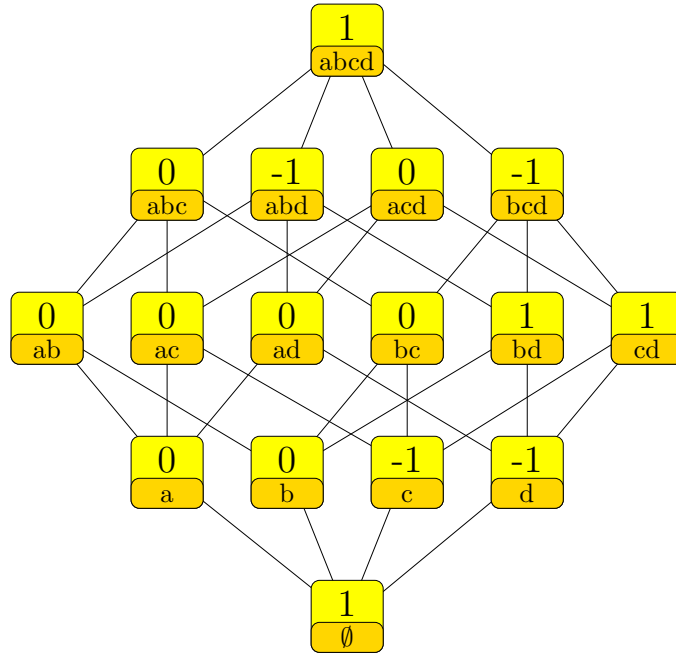
2.8.8.7 Differential inset (248)



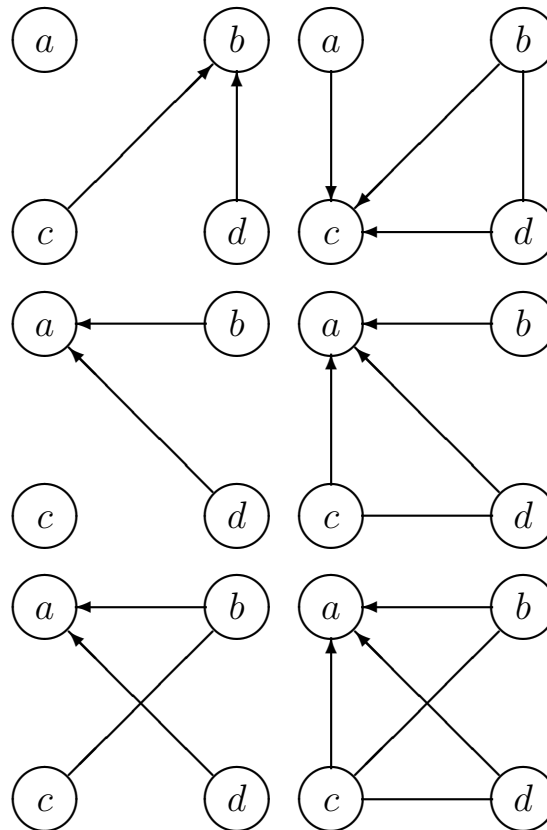
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



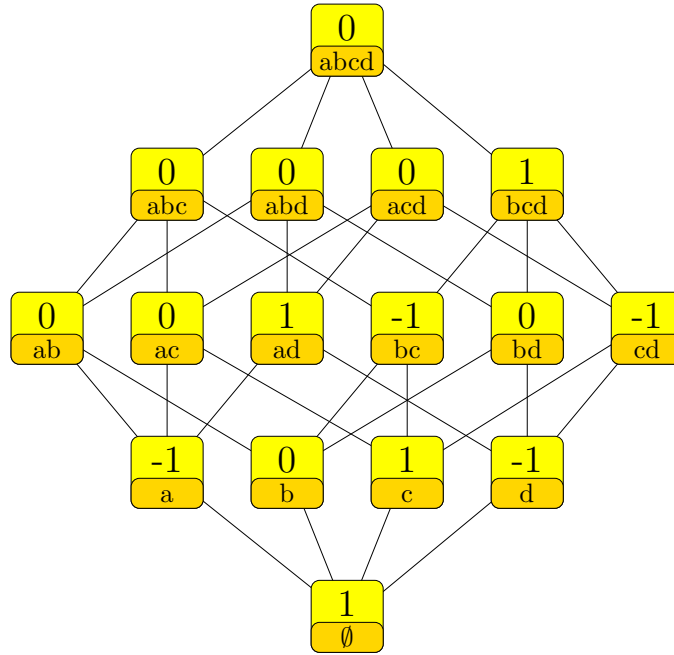
2.8.8.8 Differential inset (249)



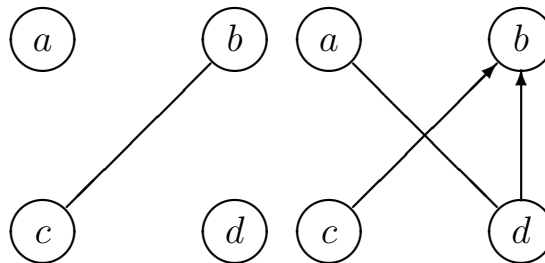
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}}) \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



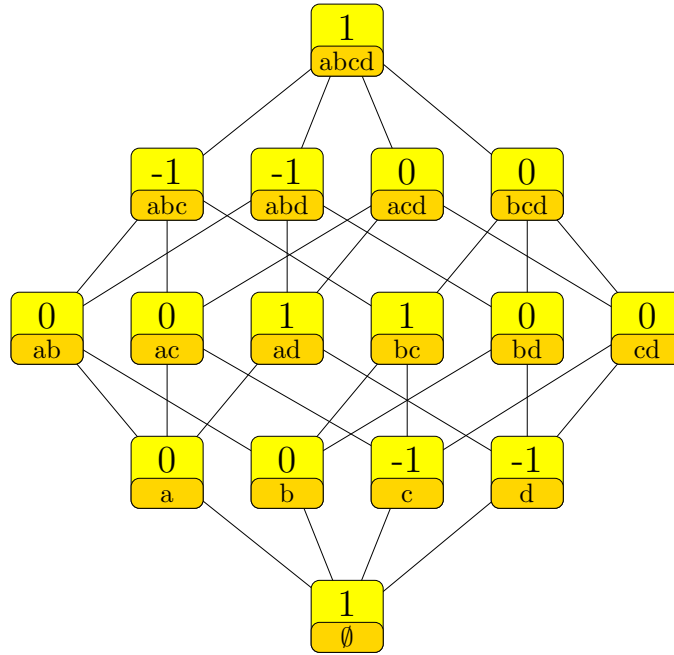
2.8.8.9 Differential inset (250)



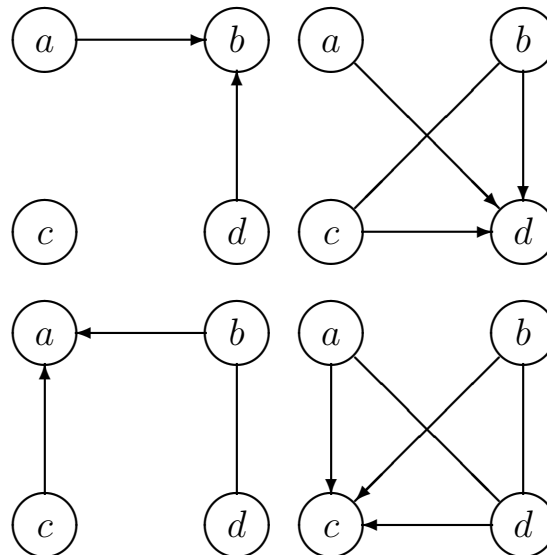
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|c \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.8.8.10 Differential imset (251)



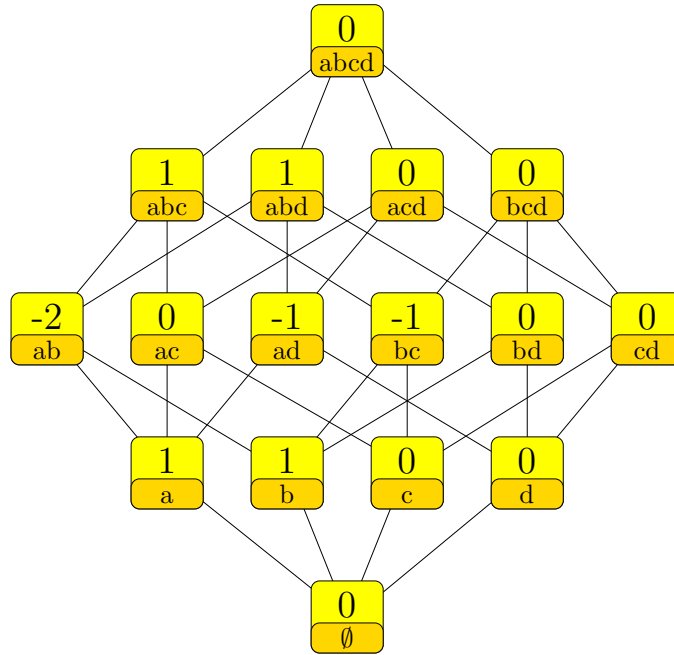
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|ab \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}}) \\
 &= (\delta_\emptyset - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



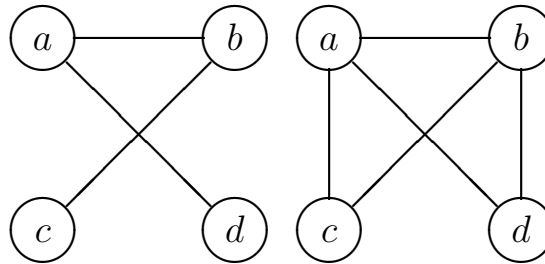
## 2.10 Squared Euclidean length 10

### 2.10.7 Number of nonzero values 7

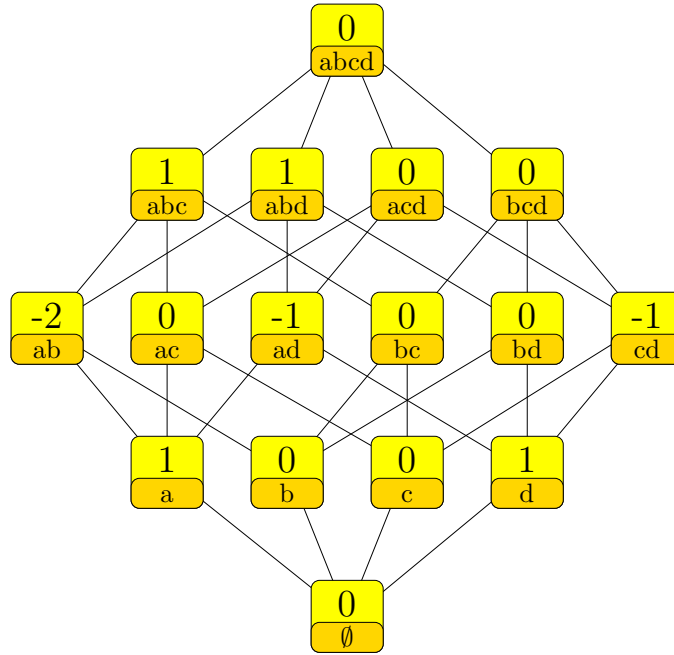
#### 2.10.7.1 Differential imset (252)



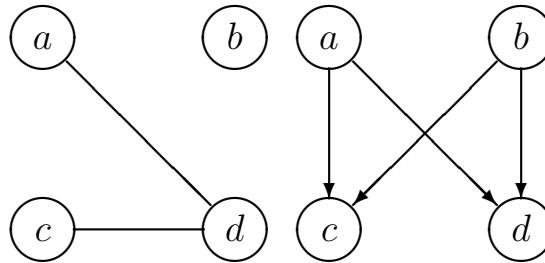
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.10.7.2 Differential imset (253)

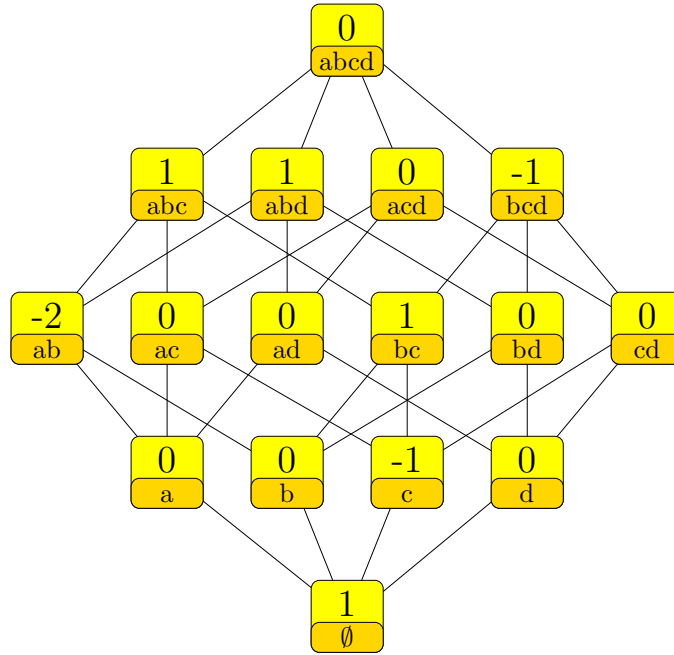


$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

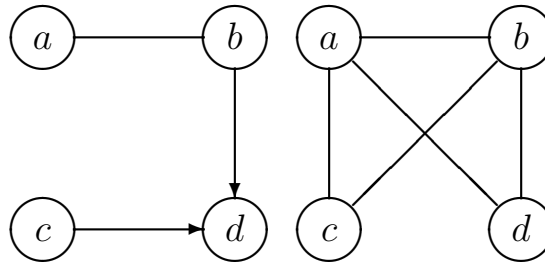




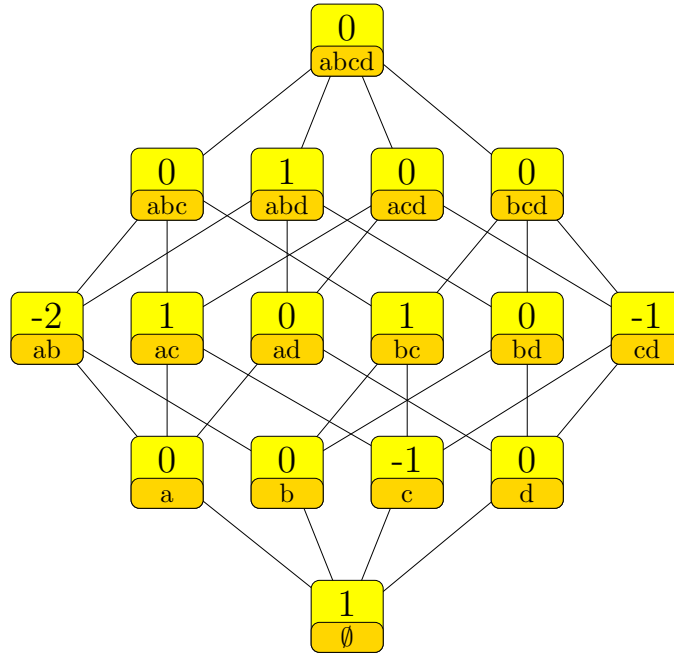
2.10.7.3 Differential imset (254)



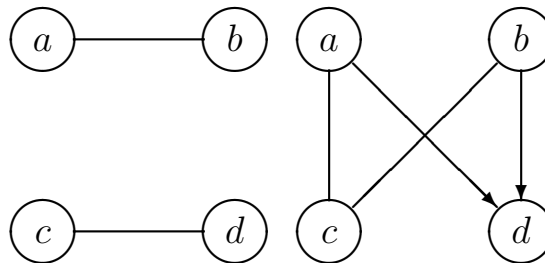
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - 2\delta_{\{a,b\}} + \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



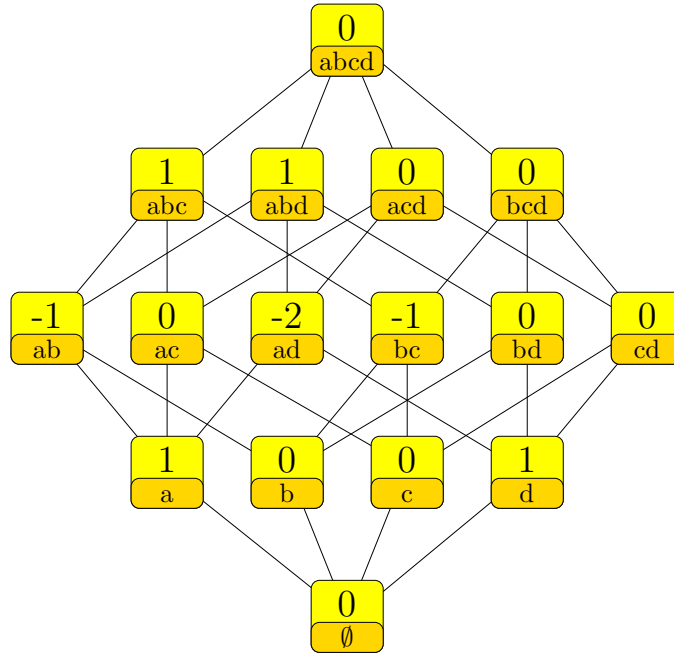
2.10.7.4 Differential imset (255)



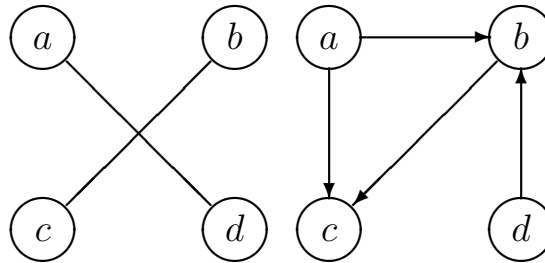
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - 2\delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|c \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



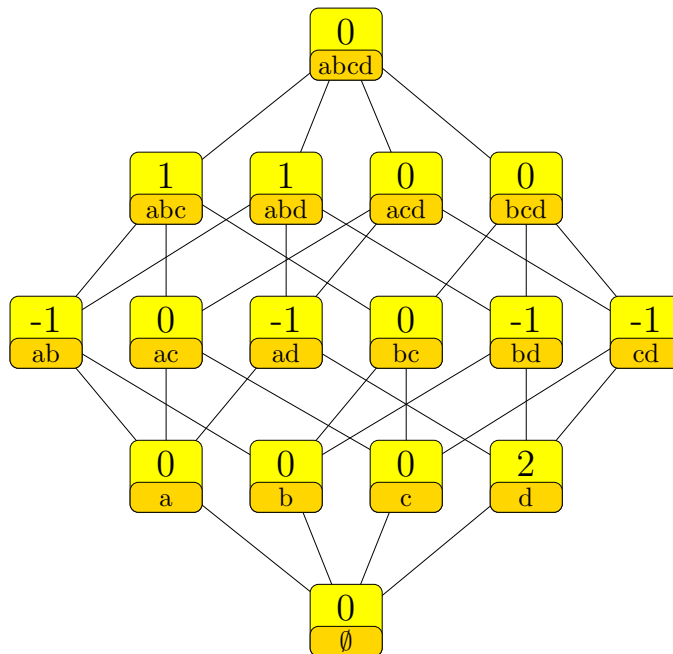
2.10.7.5 Differential imset (256)



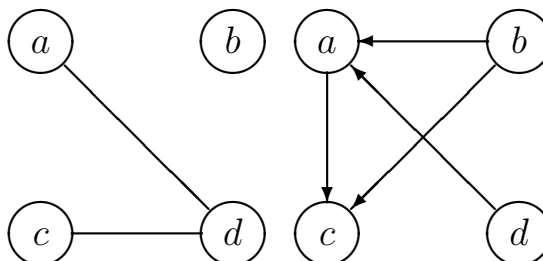
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



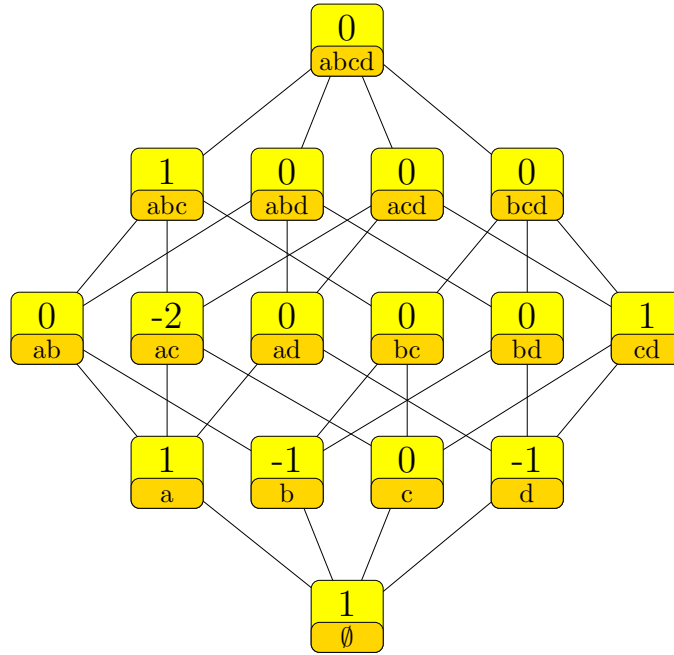
2.10.7.6 Differential imset (257)



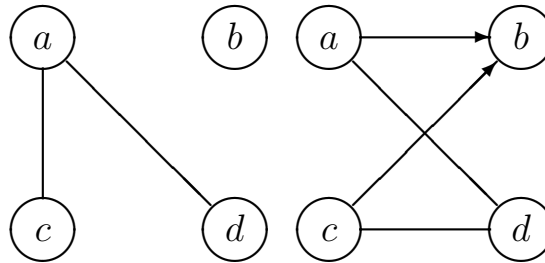
$$\begin{aligned}
 &+2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



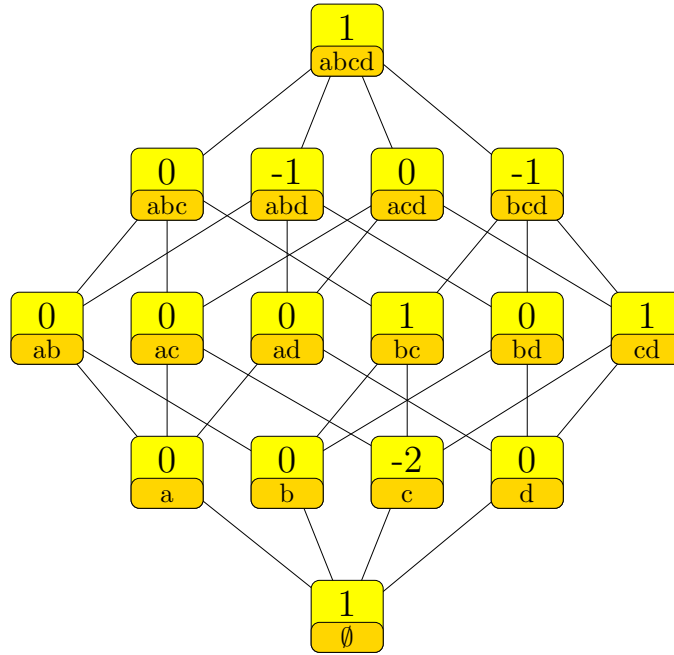
2.10.7.7 Differential imset (258)



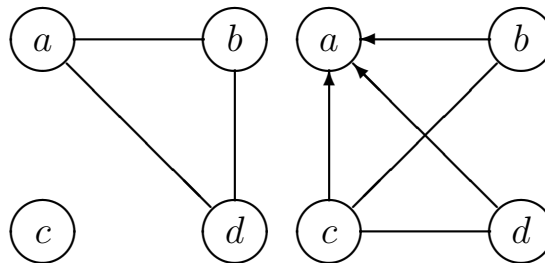
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - 2\delta_{\{a,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



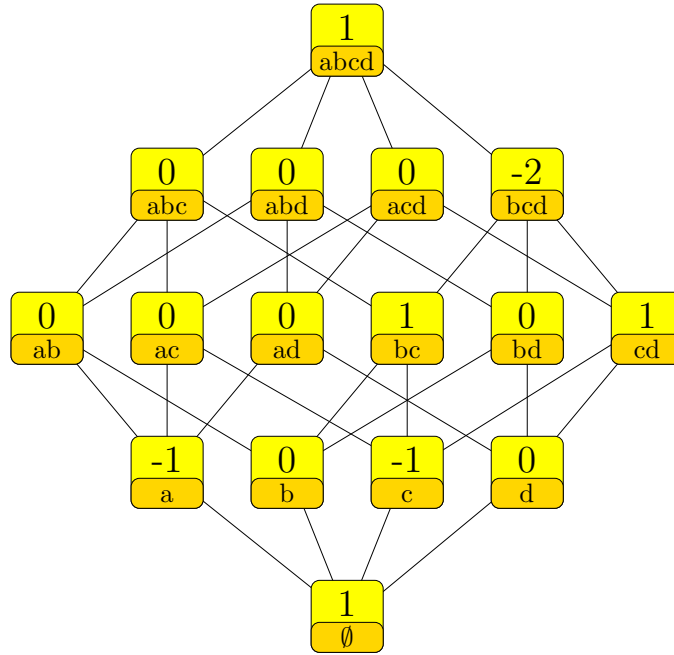
2.10.7.8 Differential imset (259)



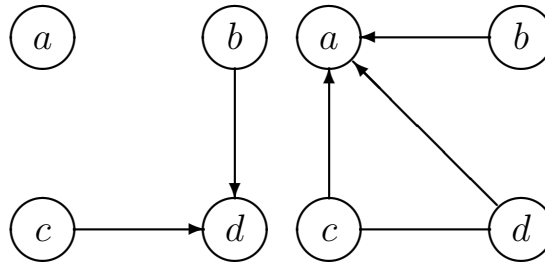
$$\begin{aligned}
 & \delta_{\emptyset} - 2\delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



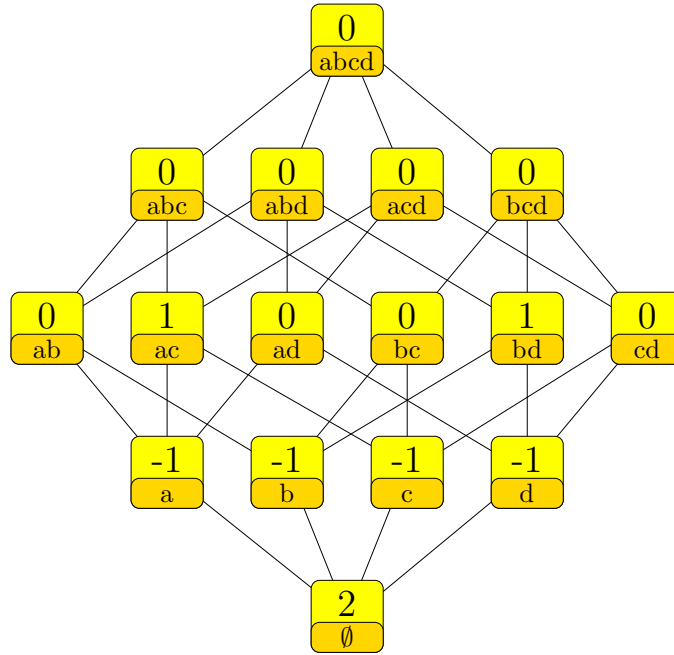
2.10.7.9 Differential imset (260)



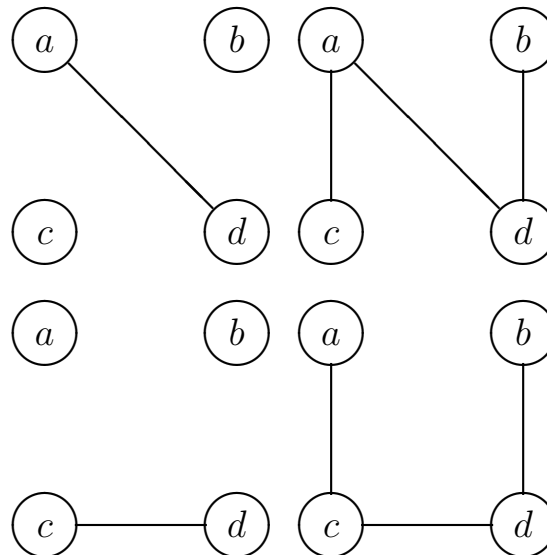
$$\begin{aligned}
 &\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,b|cd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



2.10.7.10 Differential imset (261)

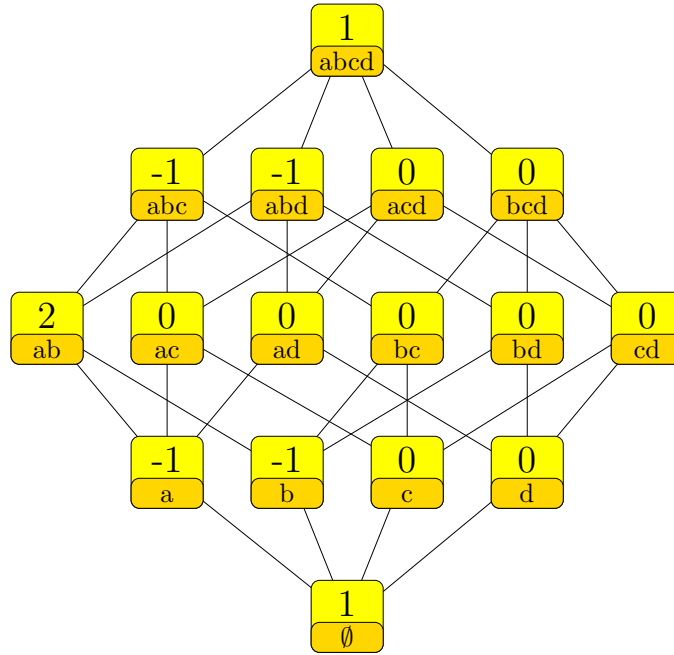


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{b,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

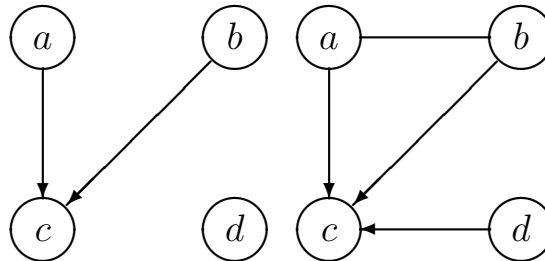




2.10.7.11 Differential imset (262)

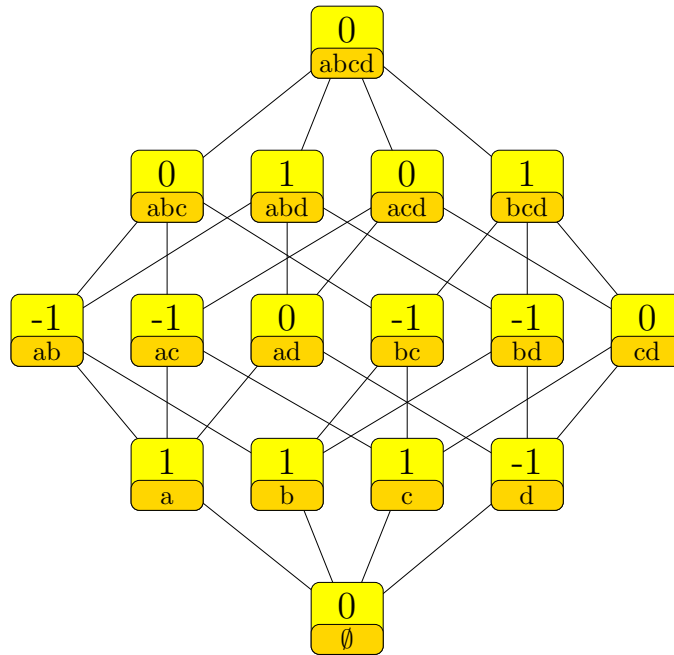


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + 2\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|ab \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$

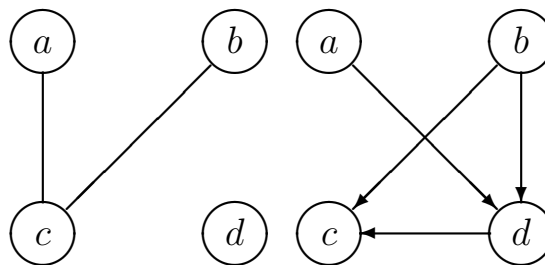


2.10.10 Number of nonzero values 10

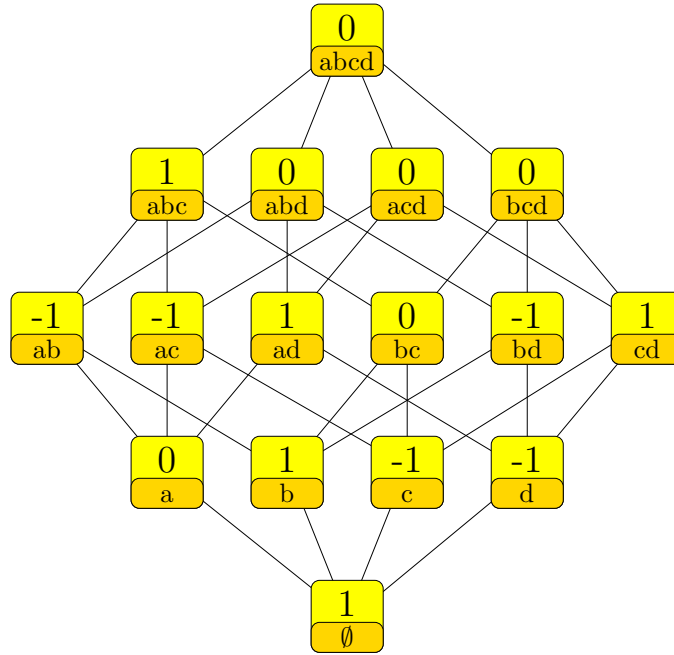
2.10.10.1 Differential imset (263)



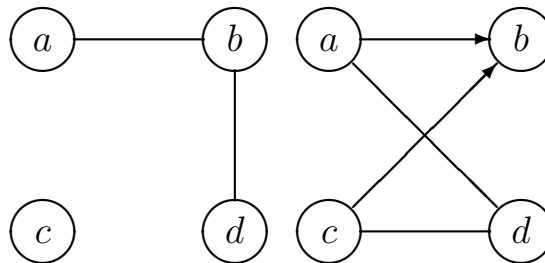
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle c,d|b \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



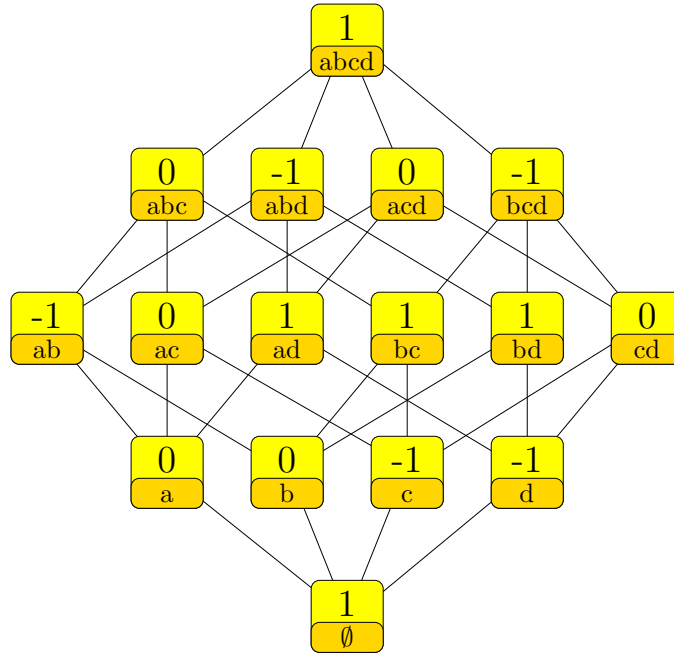
2.10.10.2 Differential imset (264)



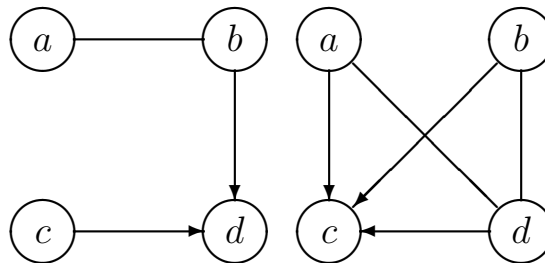
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle a,d|\emptyset \rangle} - u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_\emptyset + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



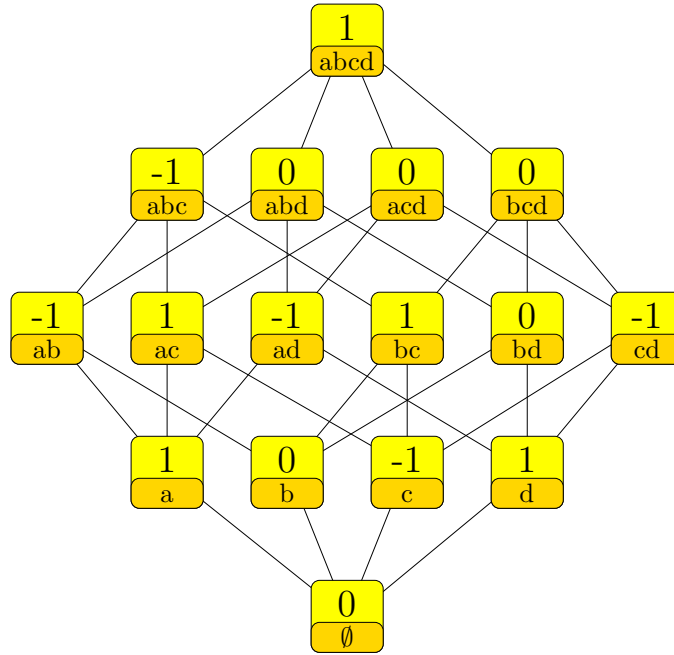
2.10.10.3 Differential imset (265)



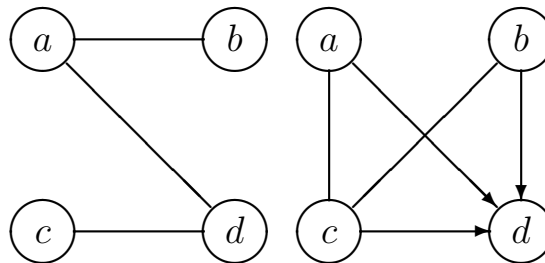
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



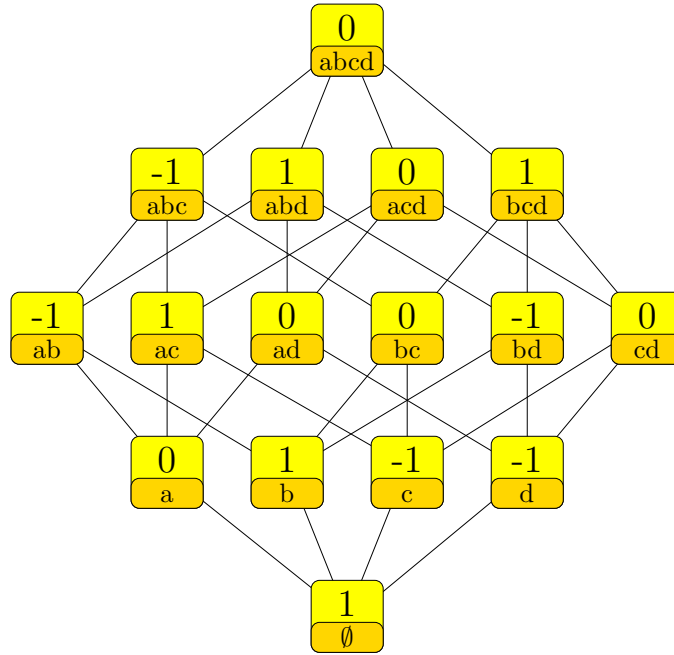
2.10.10.4 Differential imset (266)



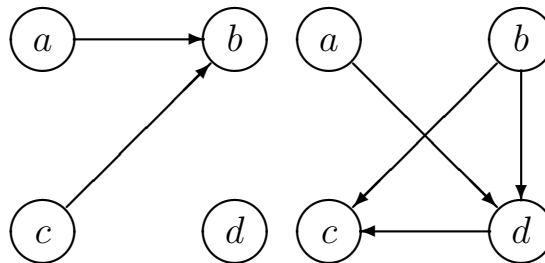
$$\begin{aligned}
 & \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|c \rangle} + u_{\langle a,c|d \rangle} \\
 &= (\delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



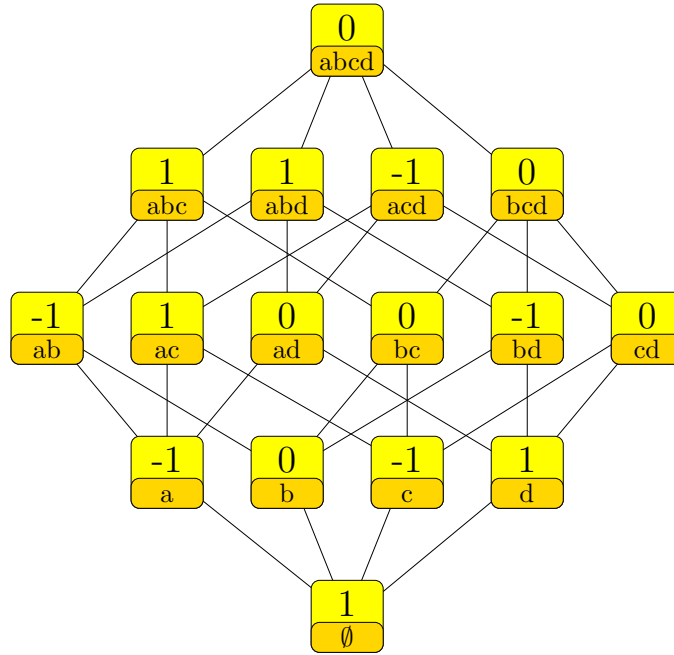
2.10.10.5 Differential imset (267)



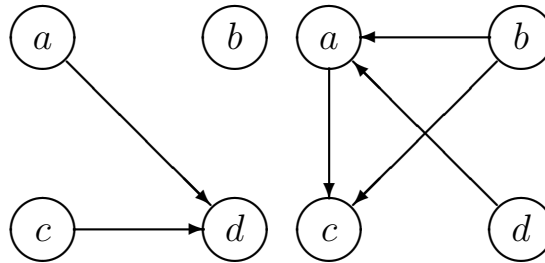
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,b|c \rangle} + u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



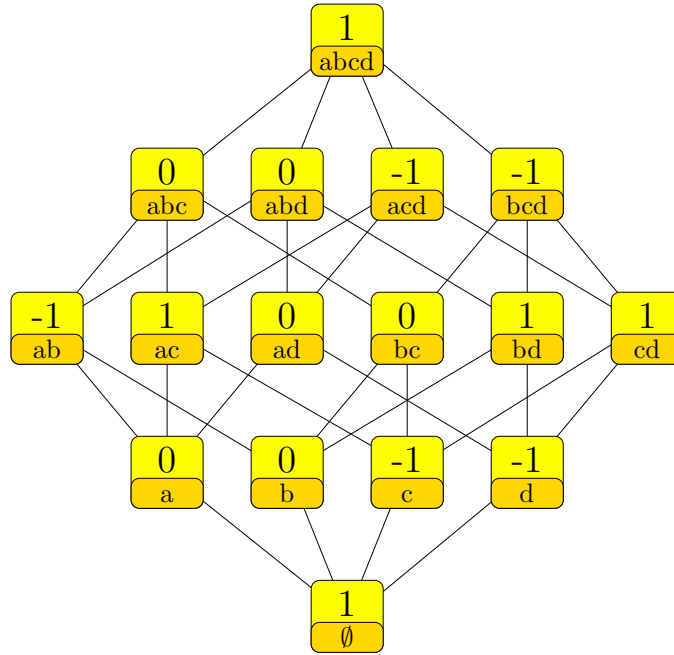
2.10.10.6 Differential imset (268)



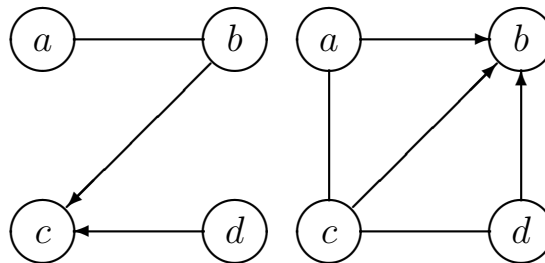
$$\begin{aligned}
 &\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,c|ad \rangle} + u_{\langle a,b|d \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.10.10.7 Differential imset (269)

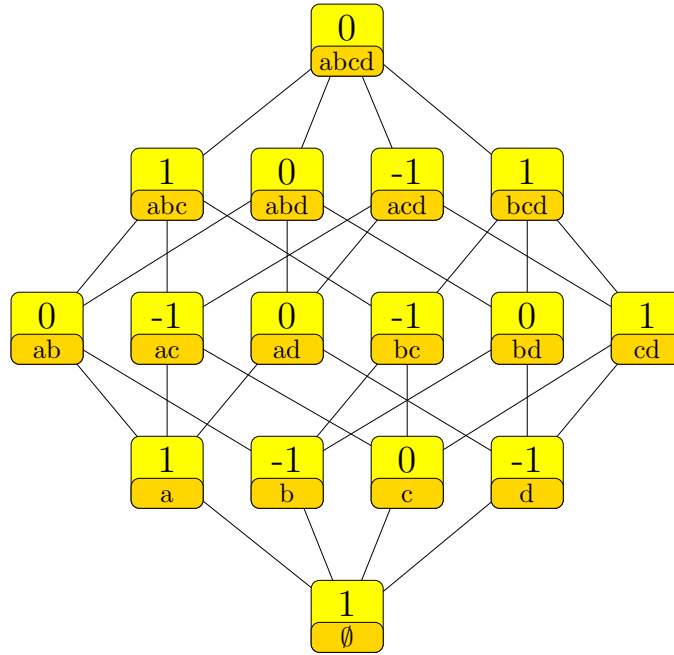


$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$

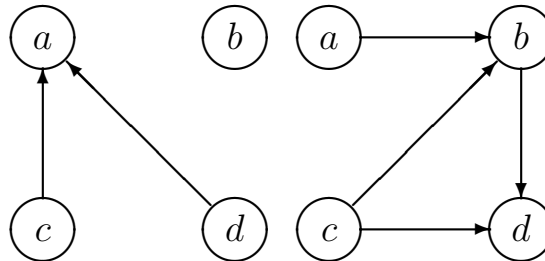




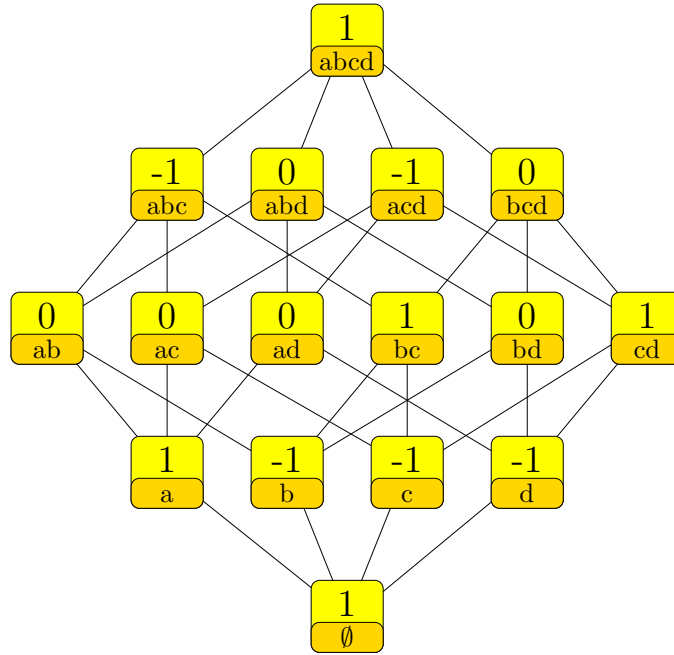
2.10.10.8 Differential imset (270)



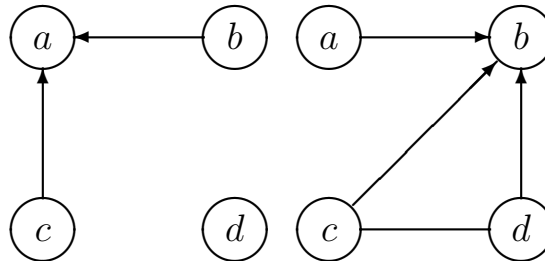
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} - u_{\langle a,d|bc \rangle} + u_{\langle b,c|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



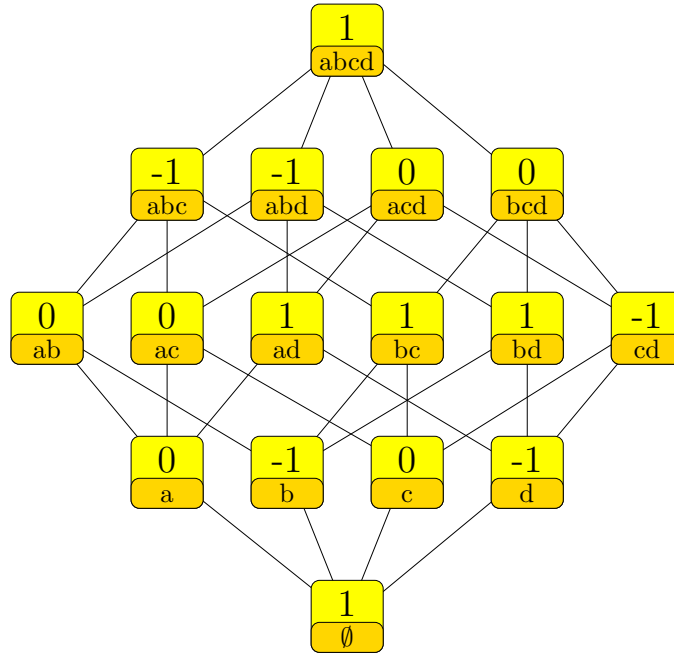
2.10.10.9 Differential imset (271)



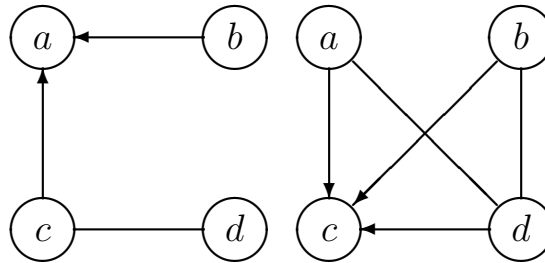
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



2.10.10.10 Differential imset (272)



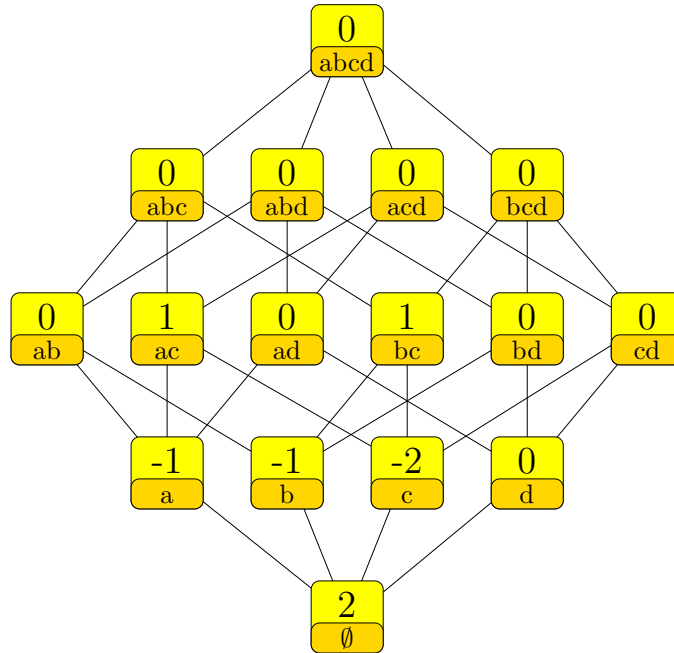
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle a,d|c \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{b,c\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



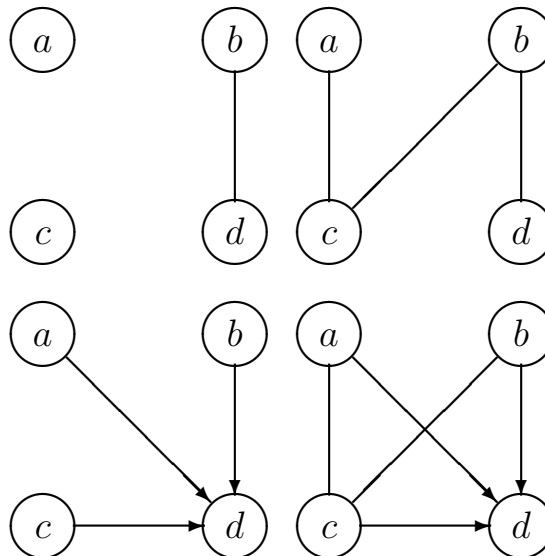
## 2.12 Squared Euclidean length 12

### 2.12.6 Number of nonzero values 6

#### 2.12.6.1 Differential imset (273)

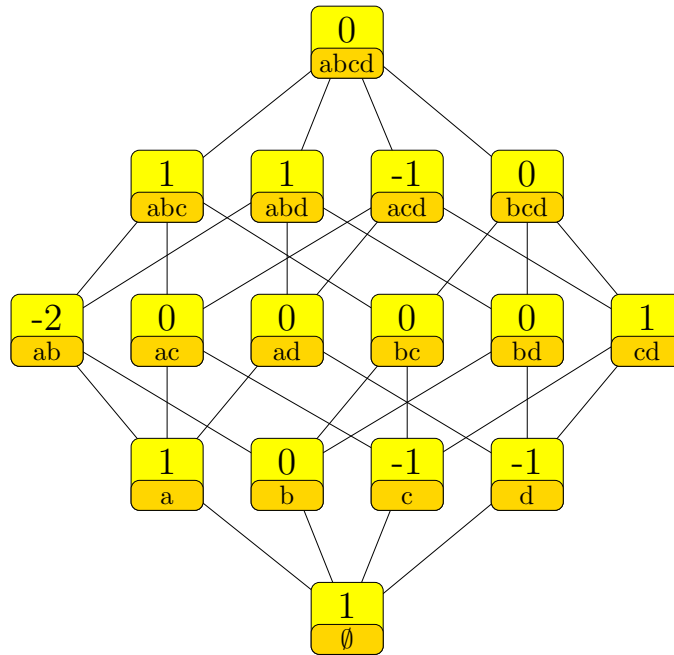


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$

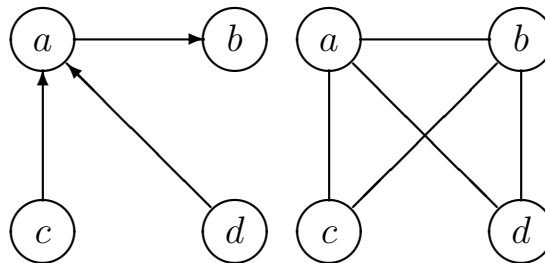


2.12.9 Number of nonzero values 9

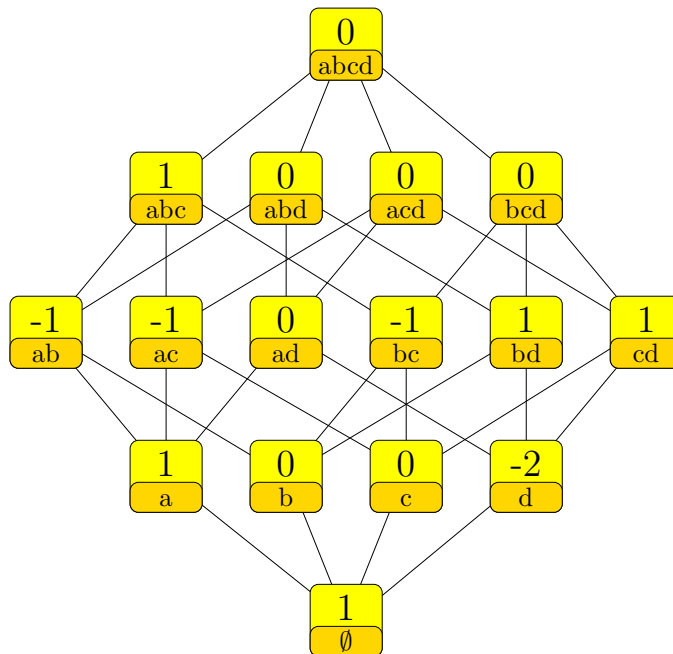
2.12.9.1 Differential imset (274)



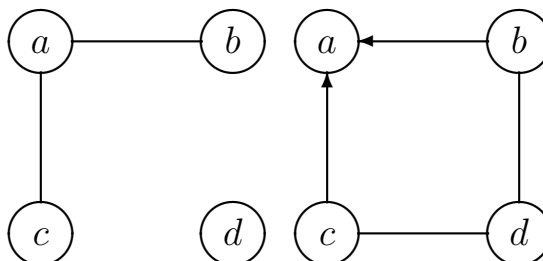
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



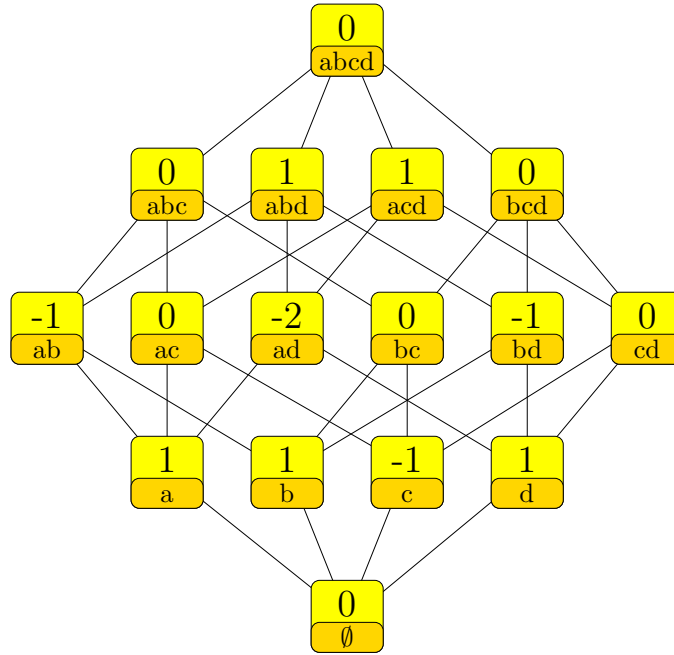
2.12.9.2 Differential imset (275)



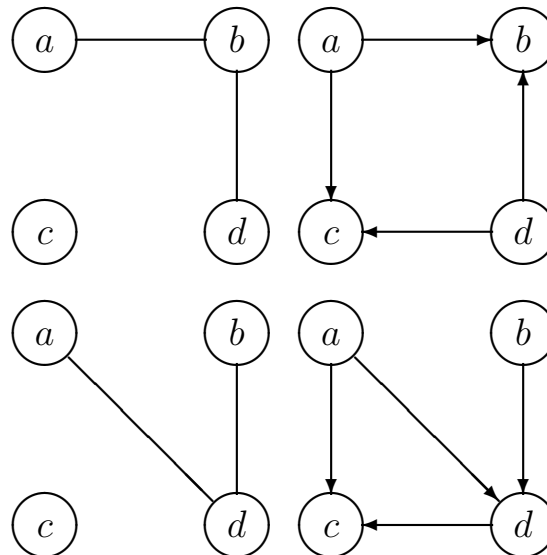
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



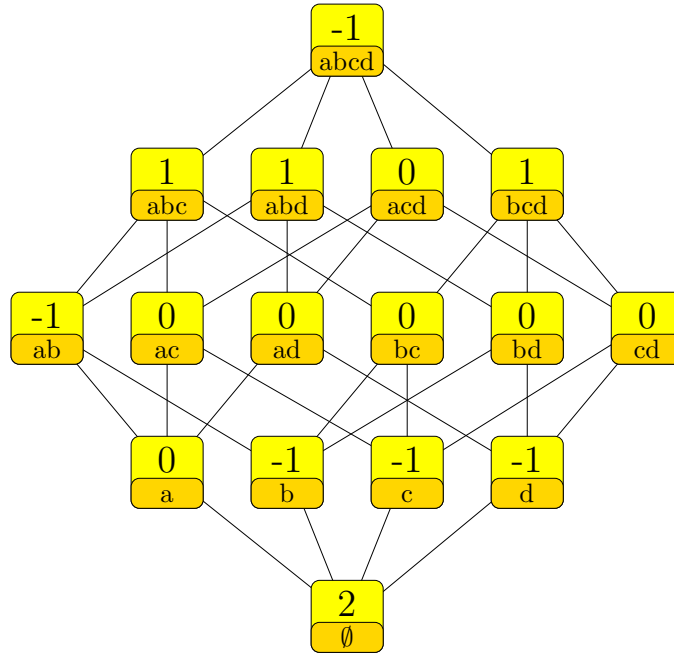
2.12.9.3 Differential imset (276)



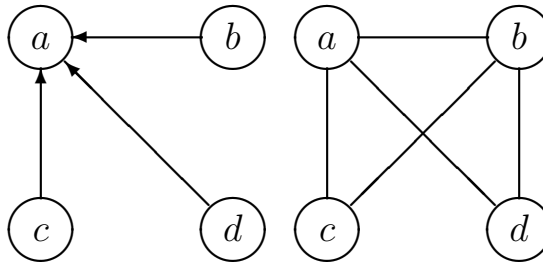
$$\begin{aligned}
 & \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,b\}} - 2\delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle a,d|b \rangle} + u_{\langle c,d|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + 2\delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &= (\delta_{\emptyset} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.12.9.4 Differential imset (277)

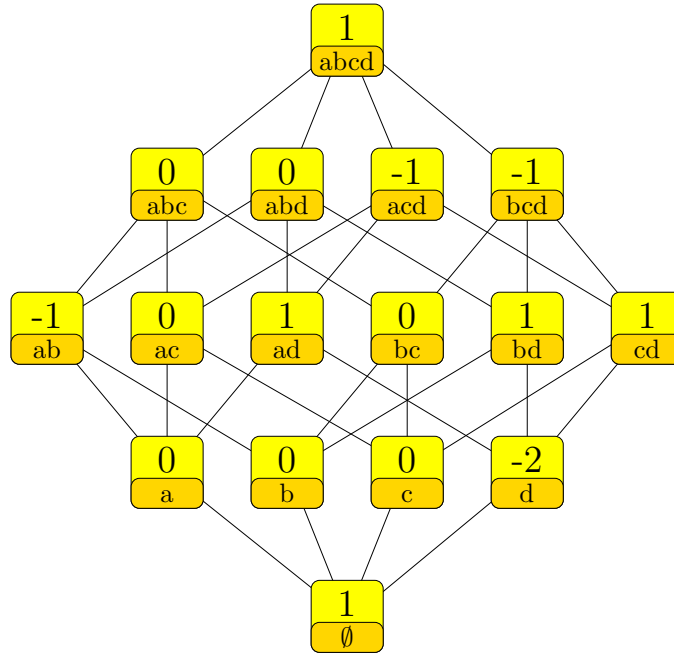


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset\rangle} + u_{\langle b,d|\emptyset\rangle} - u_{\langle c,d|ab\rangle} + u_{\langle c,d|b\rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

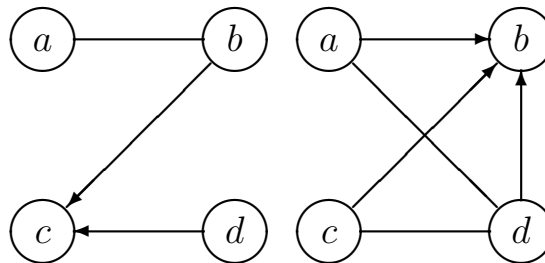




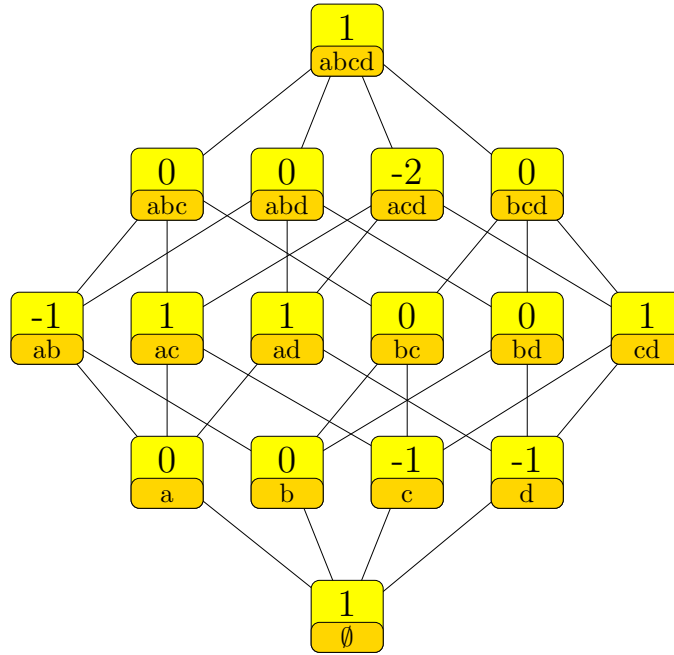
2.12.9.5 Differential imset (278)



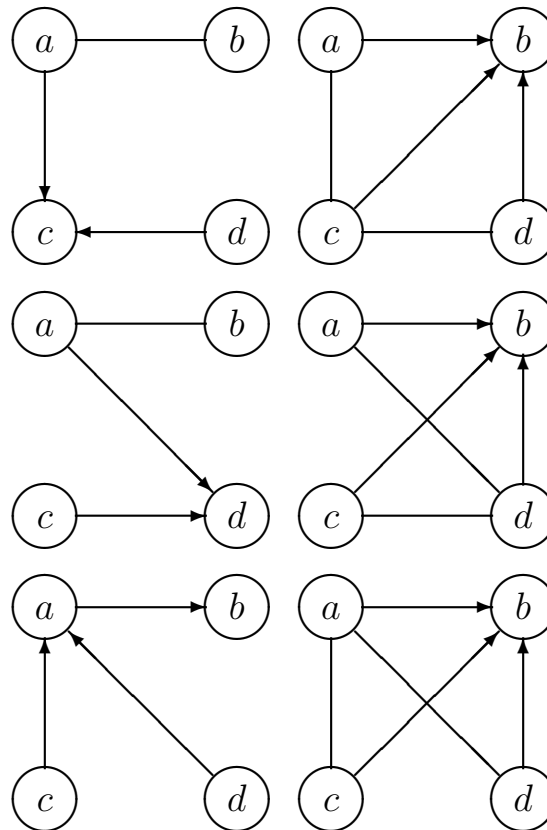
$$\begin{aligned}
 & \delta_{\emptyset} - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



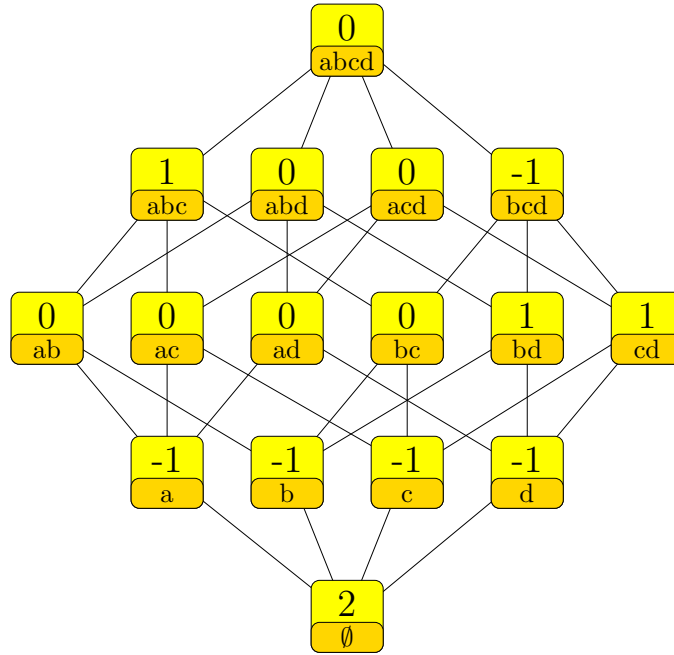
2.12.9.6 Differential imset (279)



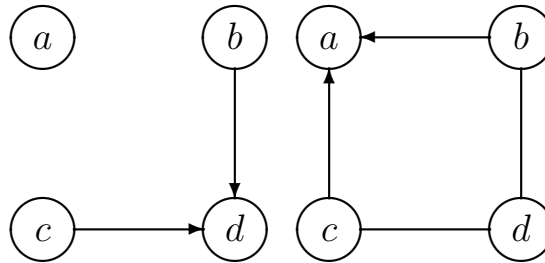
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|a \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_\emptyset - \delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}}) \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



2.12.9.7 Differential imset (280)

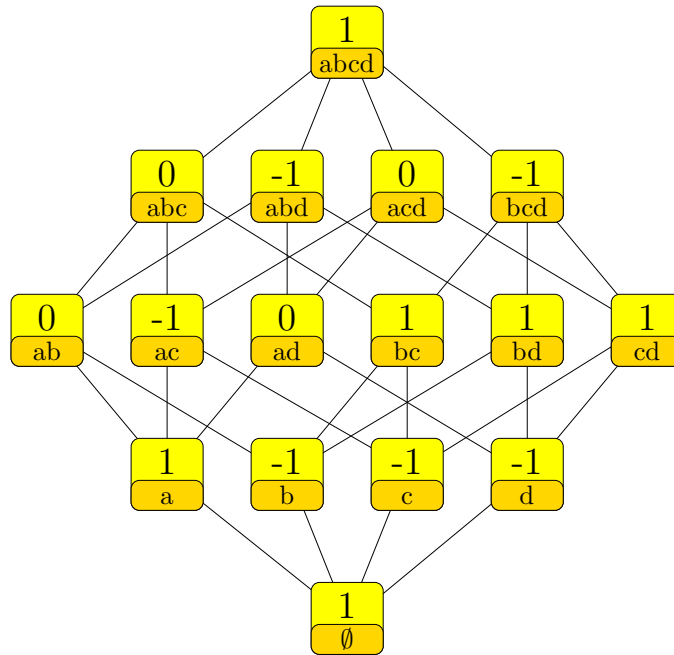


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

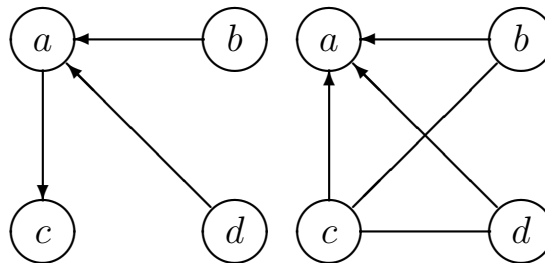


2.12.12 Number of nonzero values 12

2.12.12.1 Differential imset (281)



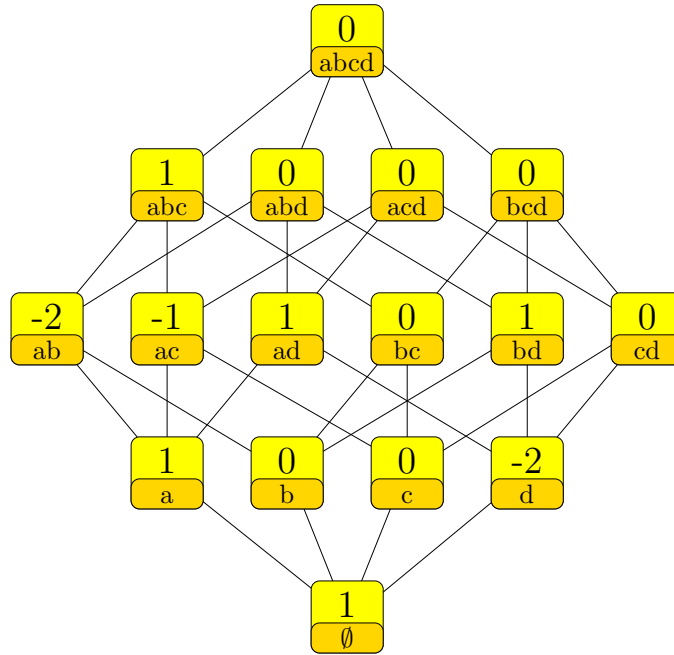
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|c \rangle} \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



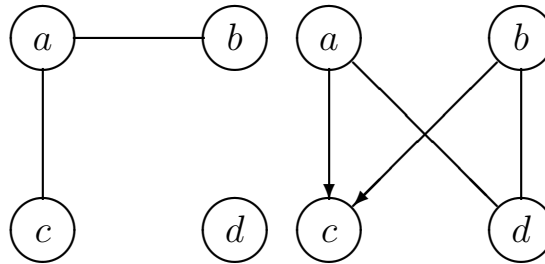
## 2.14 Squared Euclidean length 14

### 2.14.8 Number of nonzero values 8

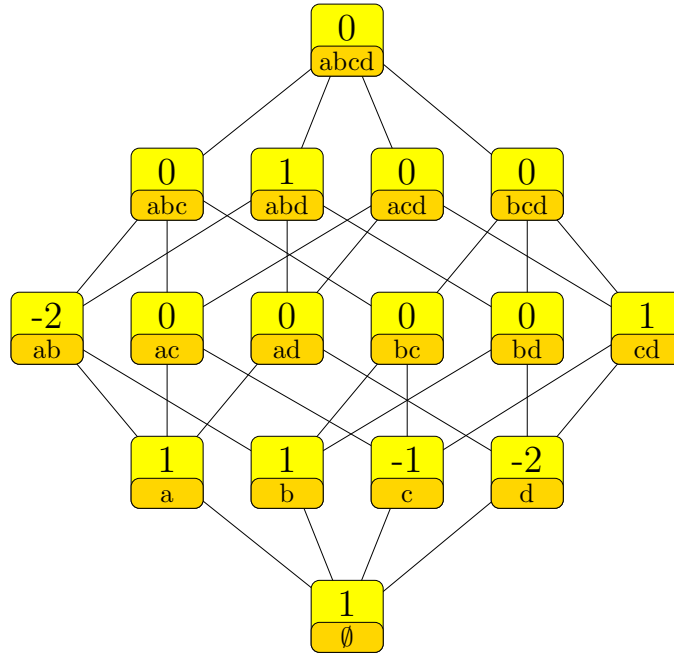
#### 2.14.8.1 Differential imset (282)



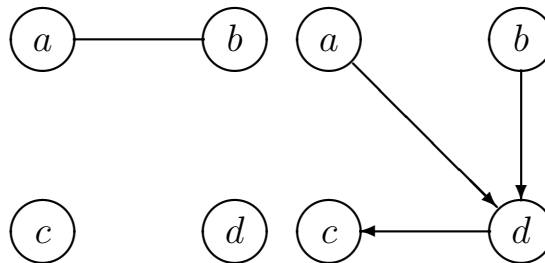
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} - 2\delta_{\{d\}} - 2\delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{d\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



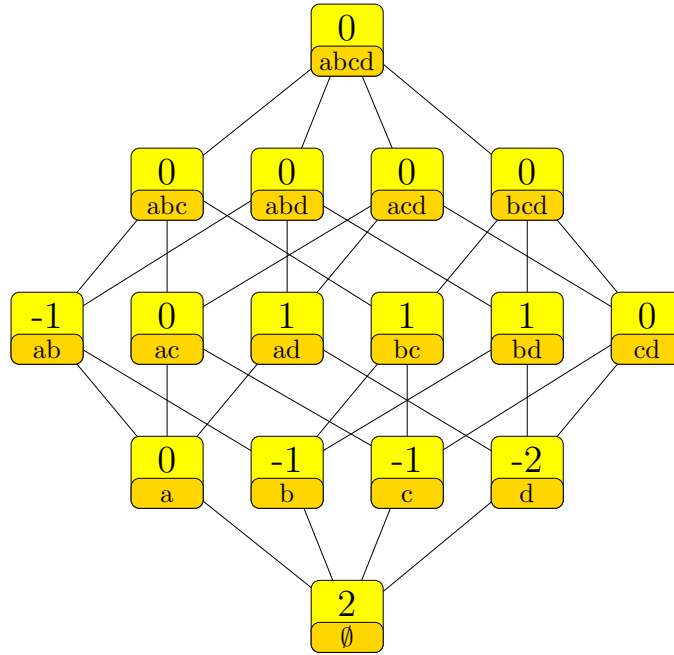
2.14.8.2 Differential imset (283)



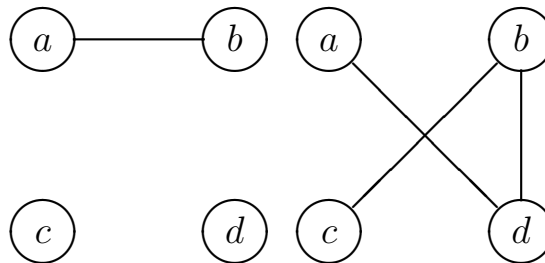
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} + \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - 2\delta_{\{a,b\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{c,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



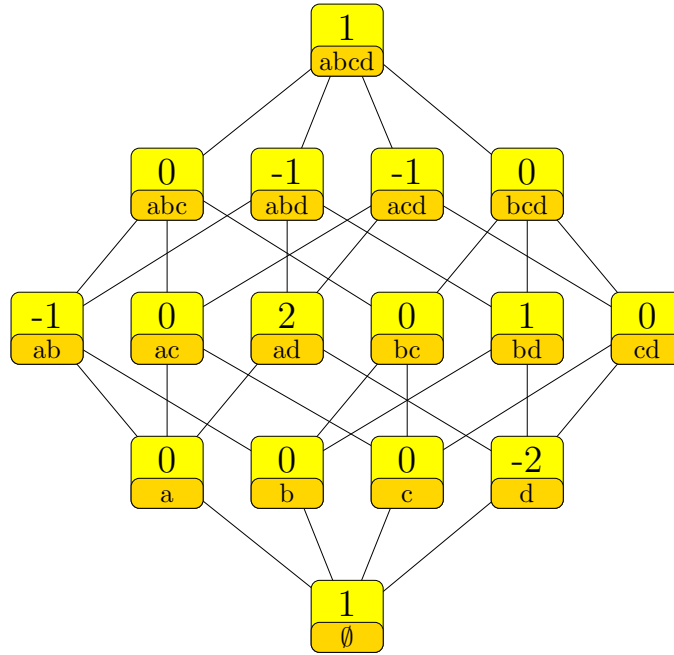
2.14.8.3 Differential imset (284)



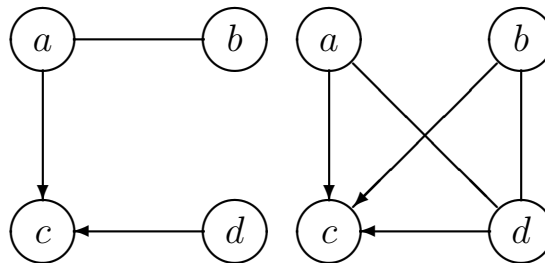
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} \\
 &= -u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



2.14.8.4 Differential imset (285)

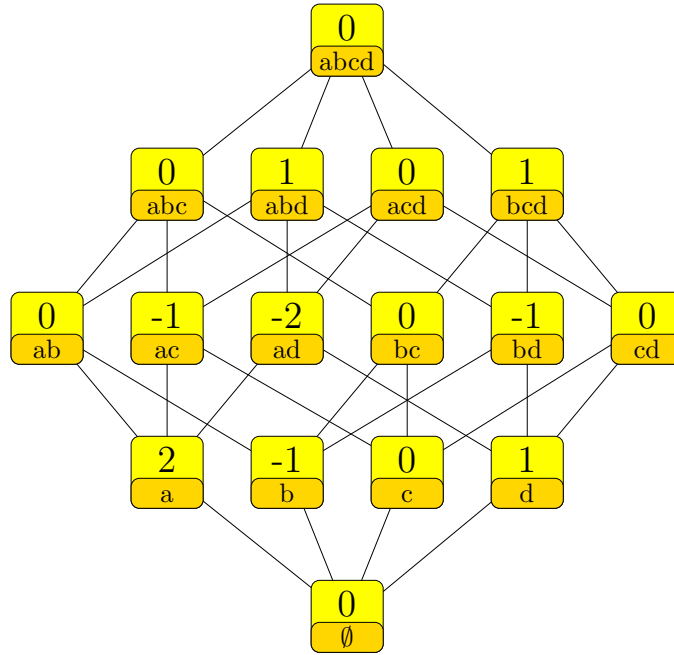


$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{d\}} - \delta_{\{a,b\}} + 2\delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$

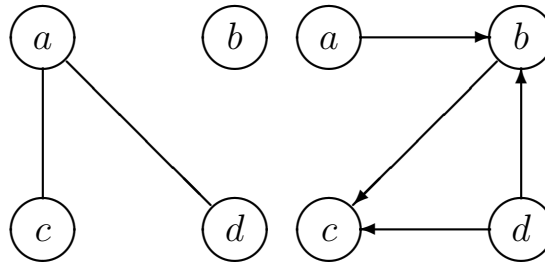




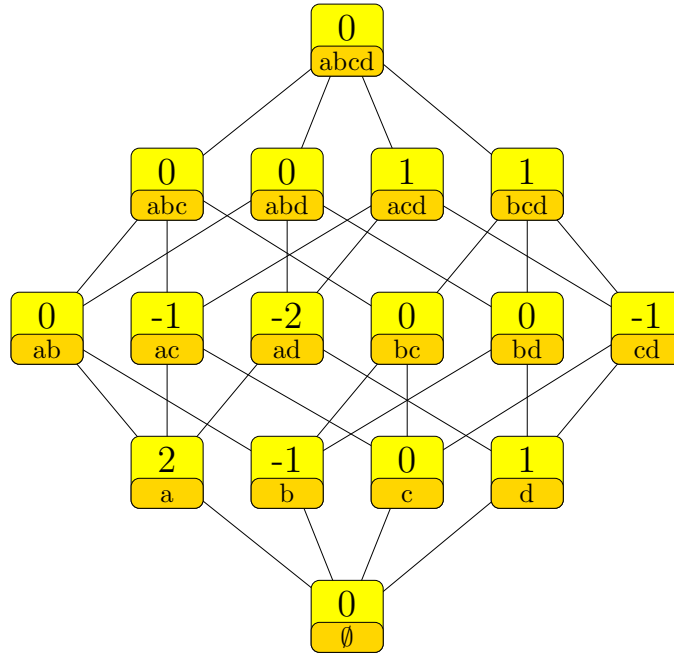
2.14.8.5 Differential imset (286)



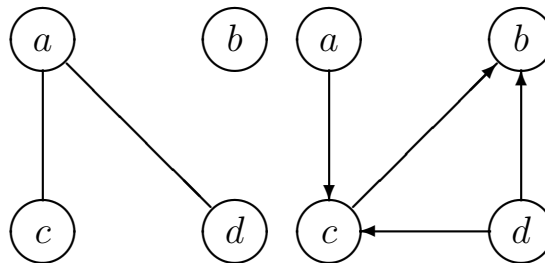
$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - 2\delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} - u_{\langle a,c|bd \rangle} + u_{\langle b,c|a \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



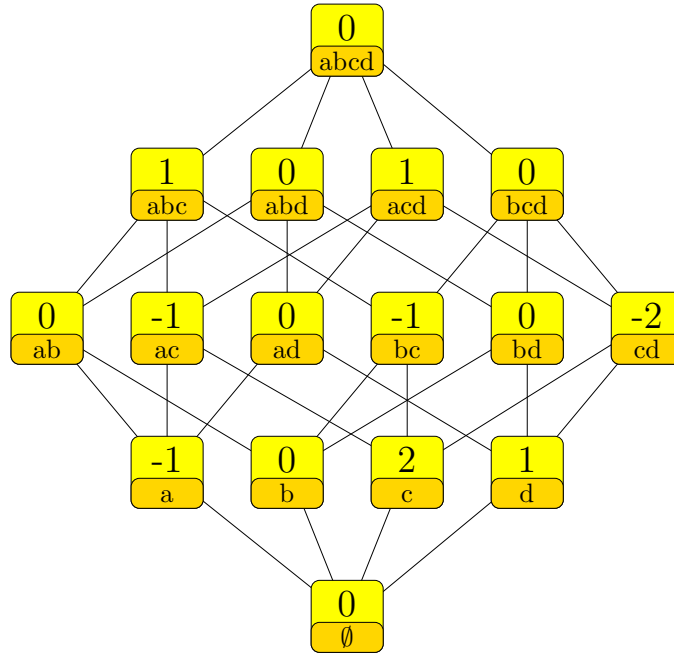
2.14.8.6 Differential imset (287)



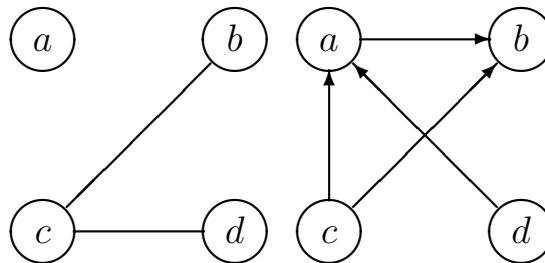
$$\begin{aligned}
 &+2\delta_{\{a\}} - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - 2\delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= -u_{\langle a,d|\emptyset\rangle} + u_{\langle b,c|\emptyset\rangle} + u_{\langle c,d|a\rangle} + u_{\langle b,d|c\rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{d\}} + \delta_{\{a,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



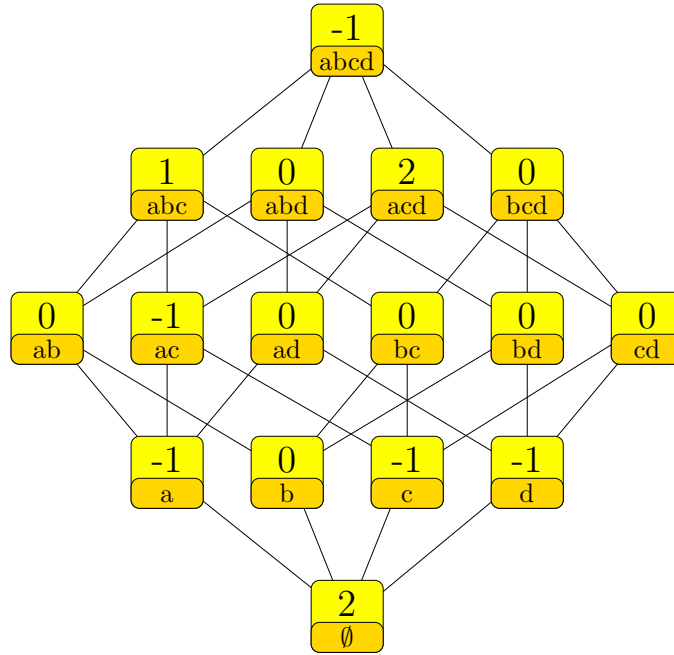
2.14.8.7 Differential imset (288)



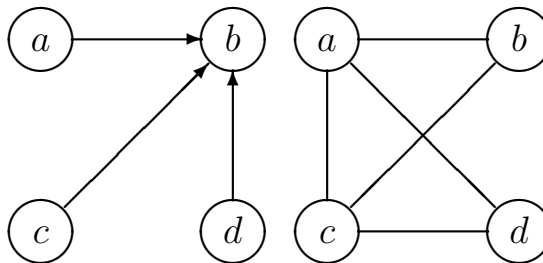
$$\begin{aligned}
 & -\delta_{\{a\}} + 2\delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - 2\delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle a,c|b \rangle} + u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{b,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



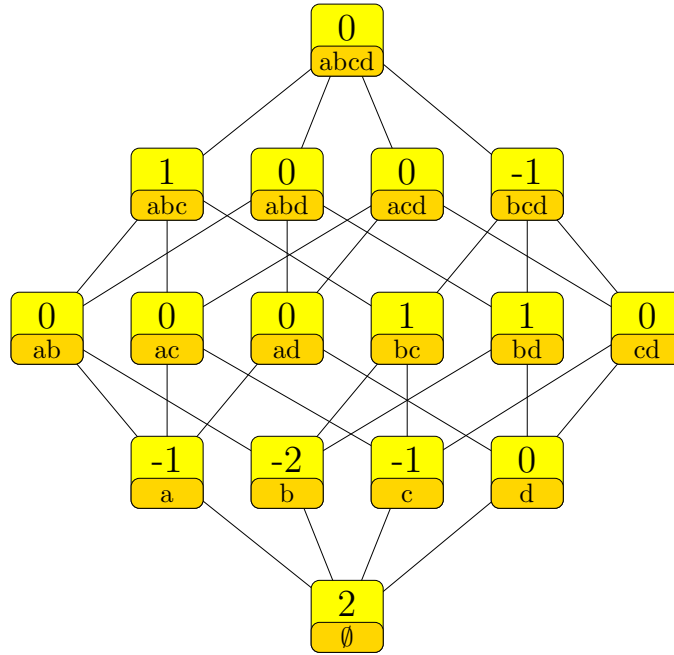
2.14.8.8 Differential imset (289)



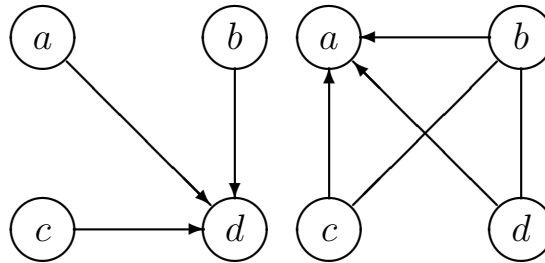
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}} + 2\delta_{\{a,c,d\}} - \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle c,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c,d\}}) \\
 &\quad - (\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



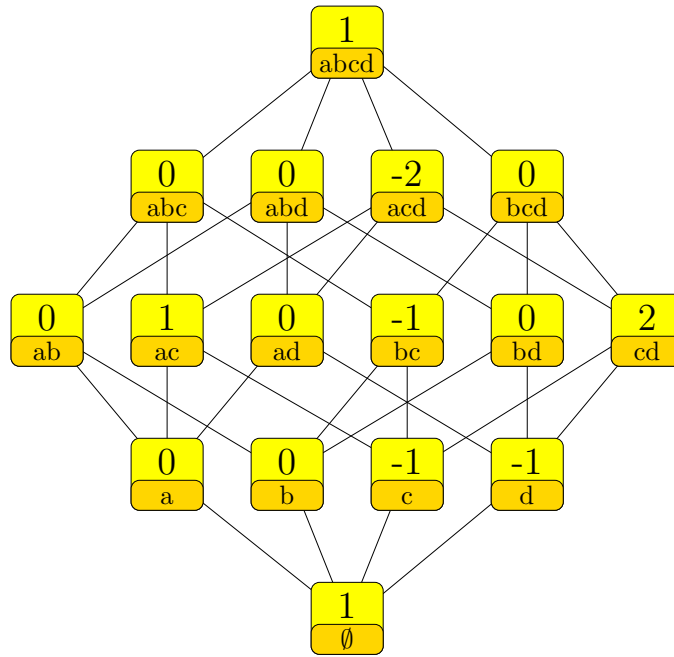
2.14.8.9 Differential imset (290)



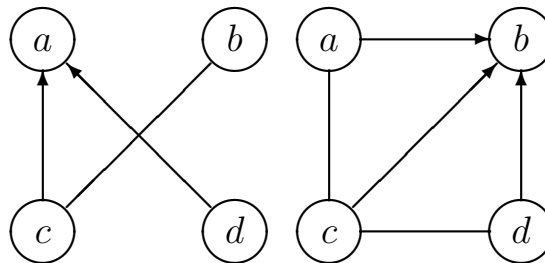
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - 2\delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle c,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



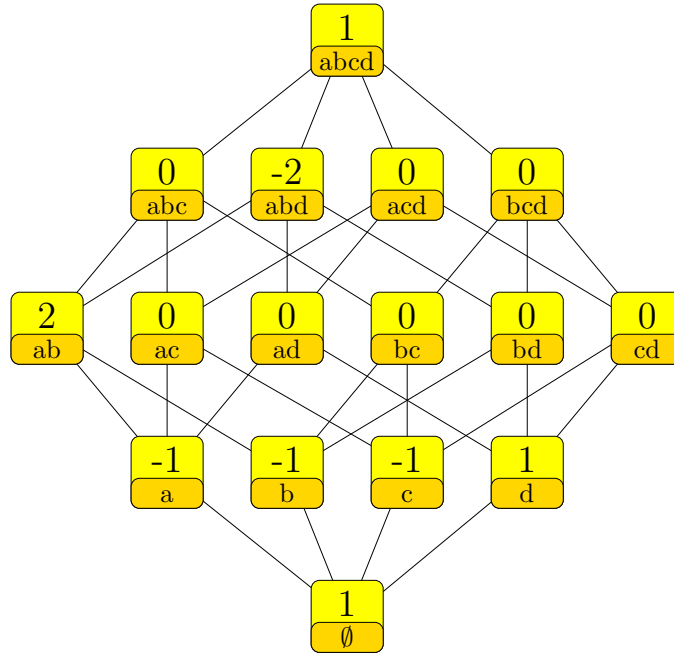
2.14.8.10 Differential imset (291)



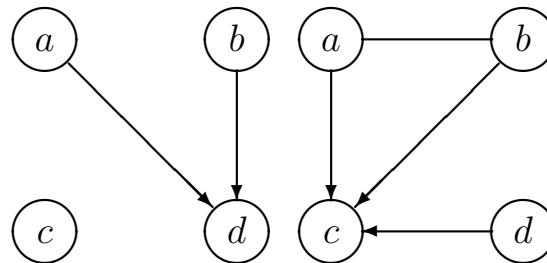
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} + 2\delta_{\{c,d\}} - 2\delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle a,b|cd \rangle} - u_{\langle a,d|c \rangle} + u_{\langle c,d|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



2.14.8.11 Differential imset (292)

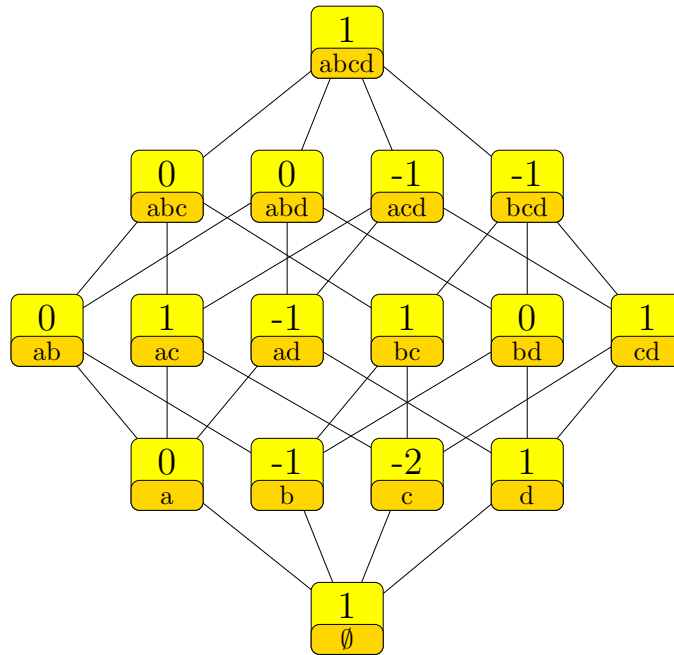


$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{d\}} + 2\delta_{\{a,b\}} - 2\delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$

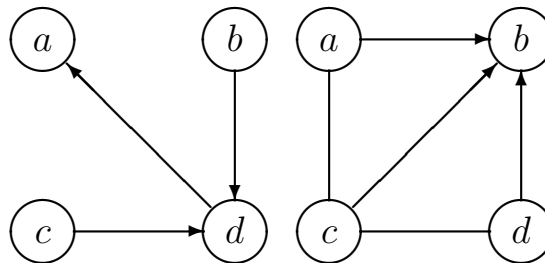


2.14.11 Number of nonzero values 11

2.14.11.1 Differential imset (293)

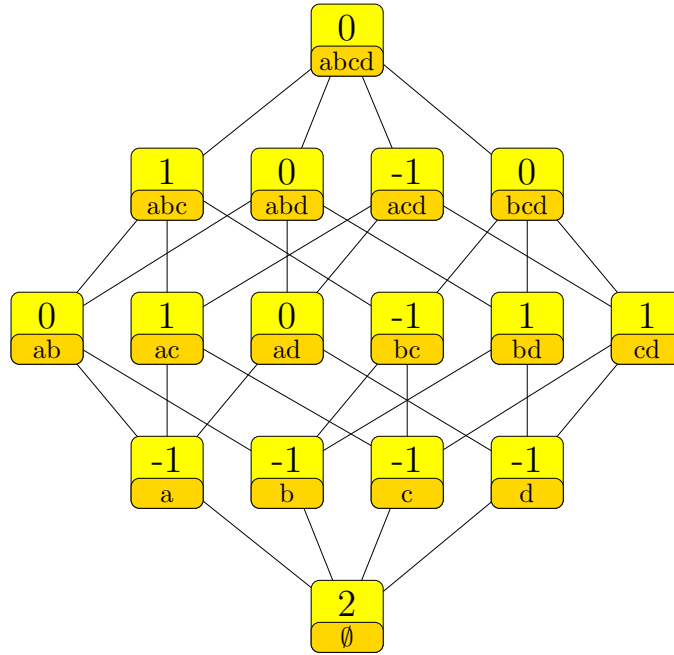


$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{b\}} - 2\delta_{\{c\}} + \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle a,c|bd \rangle} - u_{\langle a,d|c \rangle} + u_{\langle a,b|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{d\}} - \delta_{\{a,d\}} + \delta_{\{b,c\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$

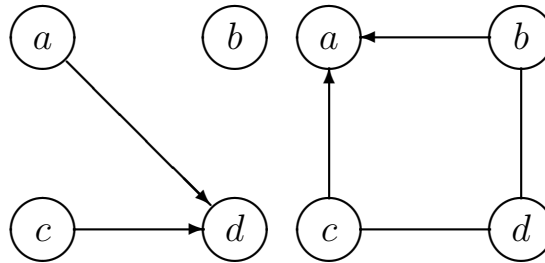




2.14.11.2 Differential imset (294)



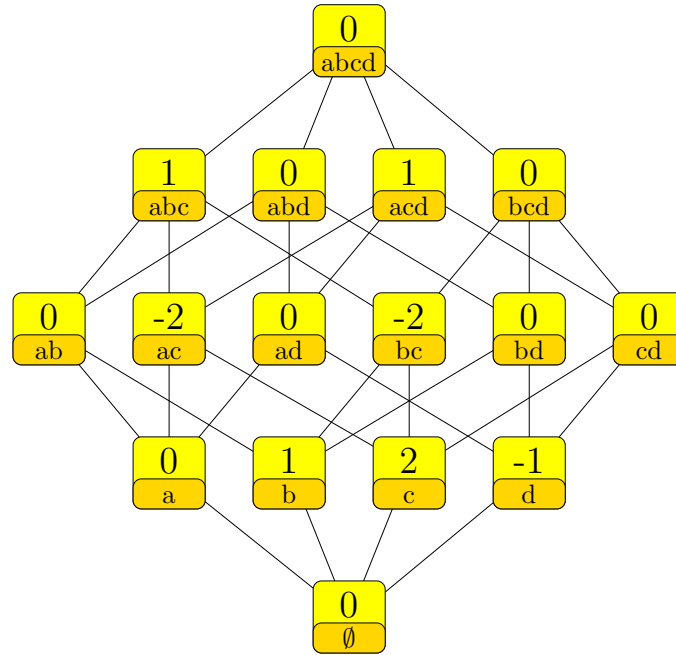
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{b,d\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,c|\emptyset\rangle} + u_{\langle b,d|\emptyset\rangle} - u_{\langle a,d|bc\rangle} + u_{\langle a,b|cd\rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



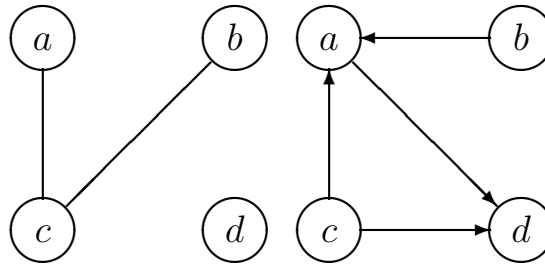
## 2.16 Squared Euclidean length 16

### 2.16.7 Number of nonzero values 7

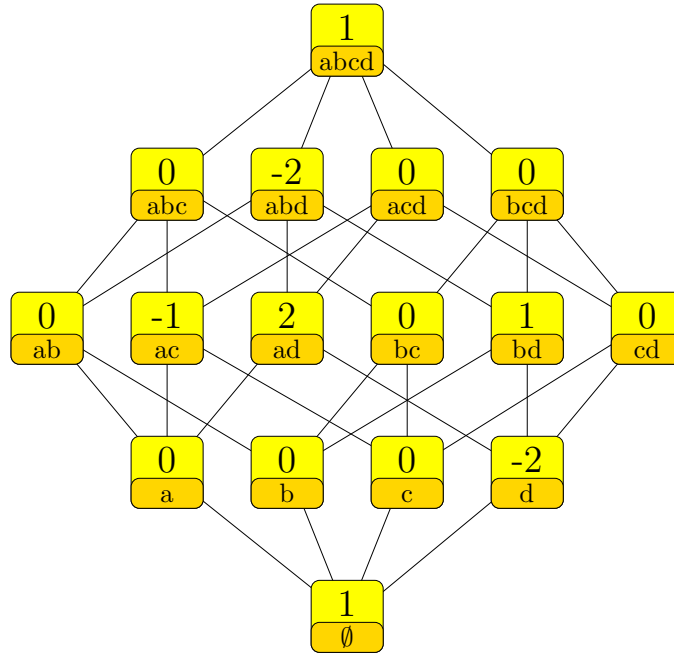
#### 2.16.7.1 Differential imset (295)



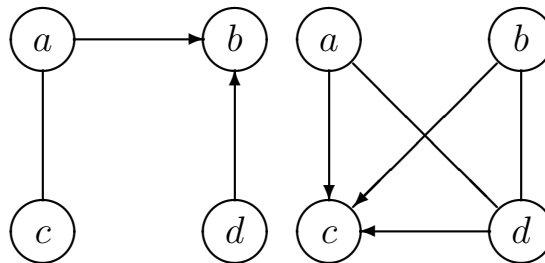
$$\begin{aligned}
 & \delta_{\{b\}} + 2\delta_{\{c\}} - \delta_{\{d\}} - 2\delta_{\{a,c\}} - 2\delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,d|\emptyset\rangle} - u_{\langle b,c|\emptyset\rangle} + u_{\langle c,d|a\rangle} + u_{\langle a,b|c\rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



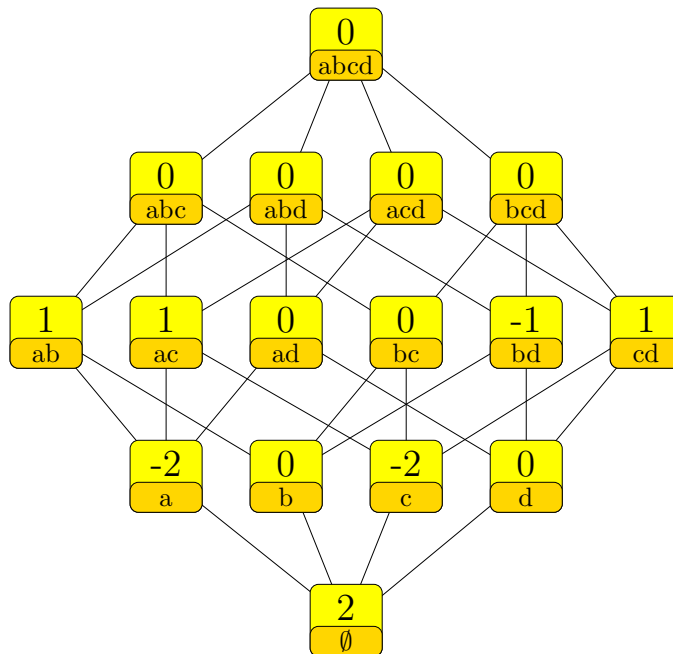
2.16.7.2 Differential imset (296)



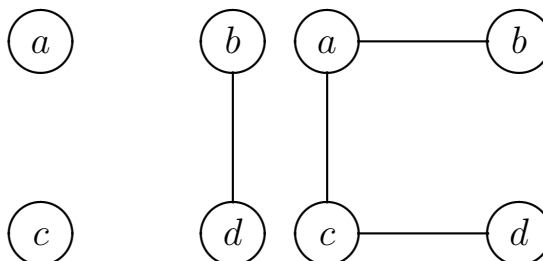
$$\begin{aligned}
 & \delta_\emptyset - 2\delta_{\{d\}} - \delta_{\{a,c\}} + 2\delta_{\{a,d\}} + \delta_{\{b,d\}} - 2\delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,b|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



2.16.7.3 Differential imset (297)

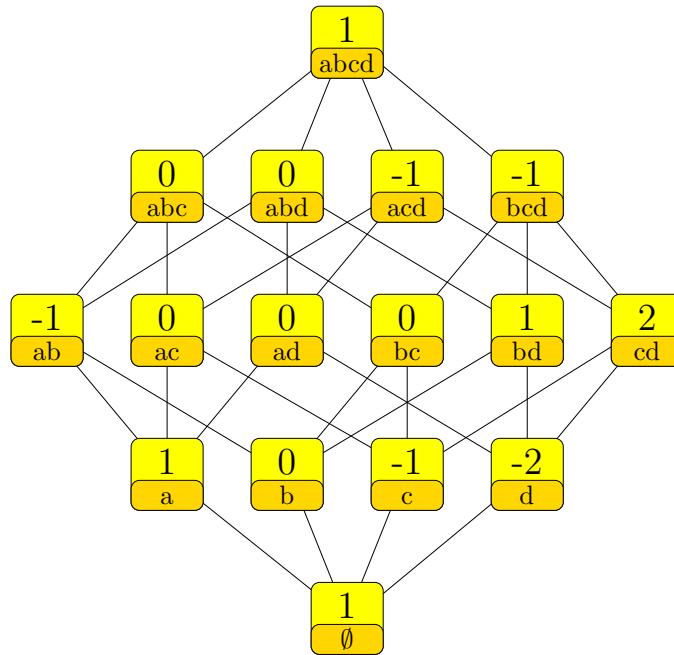


$$\begin{aligned}
 &+2\delta_\emptyset - 2\delta_{\{a\}} - 2\delta_{\{c\}} + \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} + \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

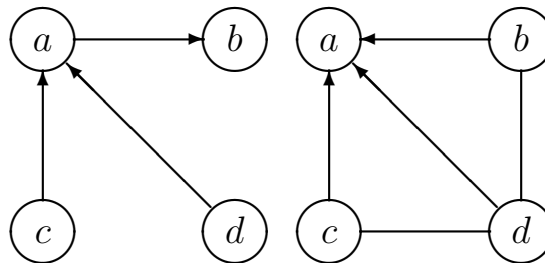


2.16.10 Number of nonzero values 10

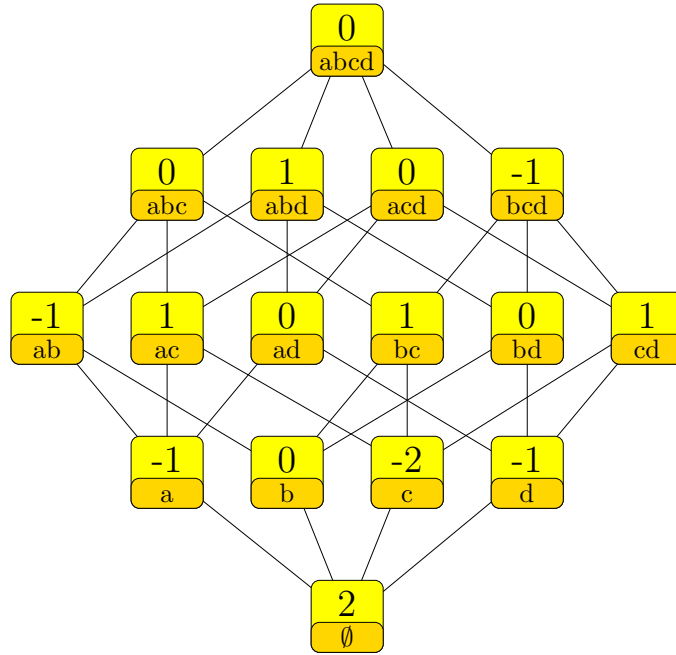
2.16.10.1 Differential imset (298)



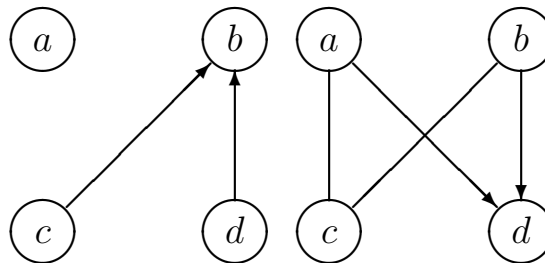
$$\begin{aligned}
 & \delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} + 2\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle c,d|\emptyset \rangle} + u_{\langle b,d|ac \rangle} + u_{\langle b,c|a \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_\emptyset + \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



2.16.10.2 Differential imset (299)



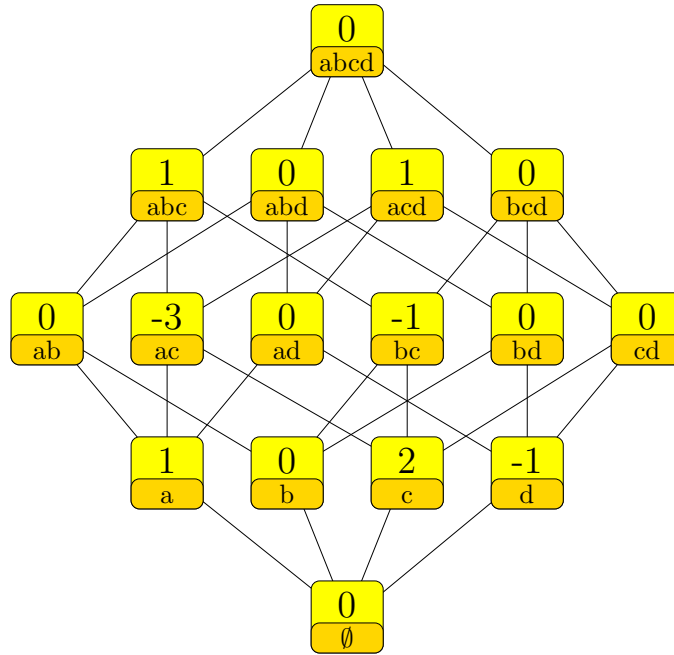
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - 2\delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,d\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|a \rangle} - u_{\langle b,d|c \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



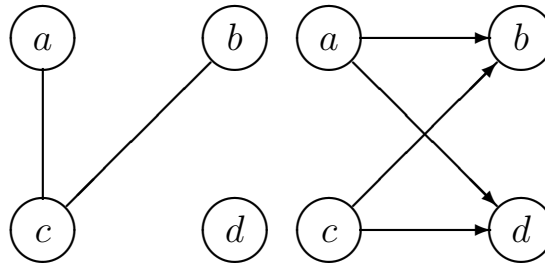
## 2.18 Squared Euclidean length 18

### 2.18.7 Number of nonzero values 7

#### 2.18.7.1 Differential imset (300)

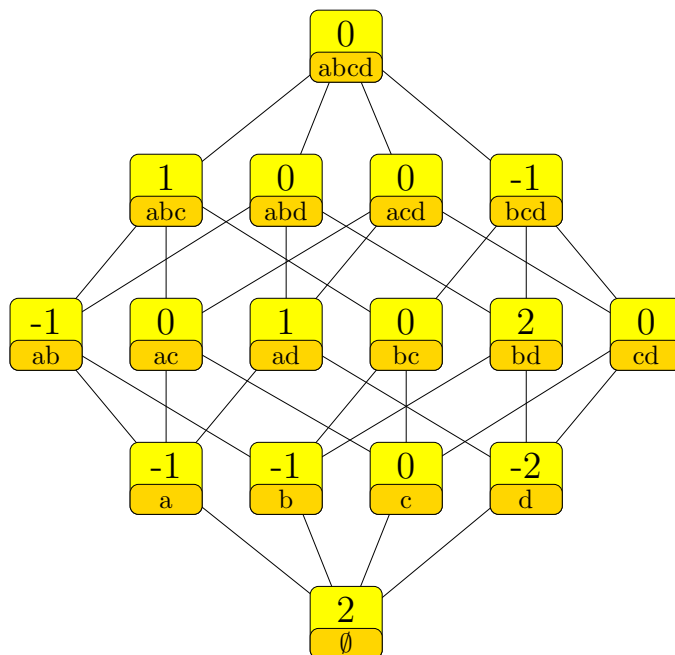


$$\begin{aligned}
 & \delta_{\{a\}} + 2\delta_{\{c\}} - \delta_{\{d\}} - 3\delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 &= -u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|a \rangle} + u_{\langle a,b|c \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{c\}} + 2\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

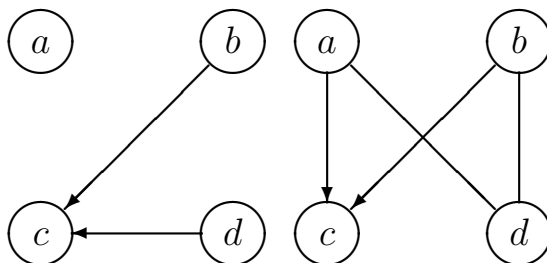


2.18.9 Number of nonzero values 9

2.18.9.1 Differential imset (301)

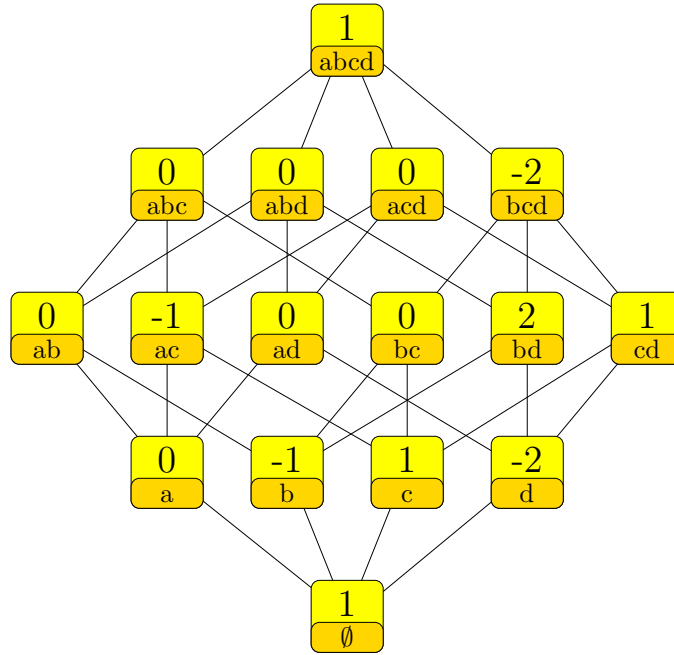


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - 2\delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + 2\delta_{\{b,d\}} + \delta_{\{a,b,c\}} - \delta_{\{b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|ab \rangle} + u_{\langle a,c|bd \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

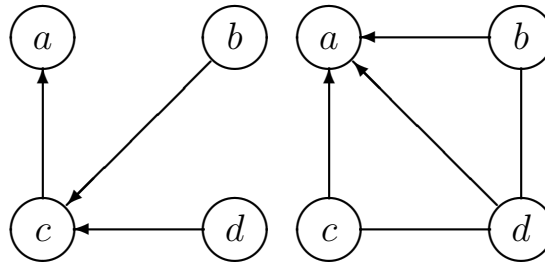




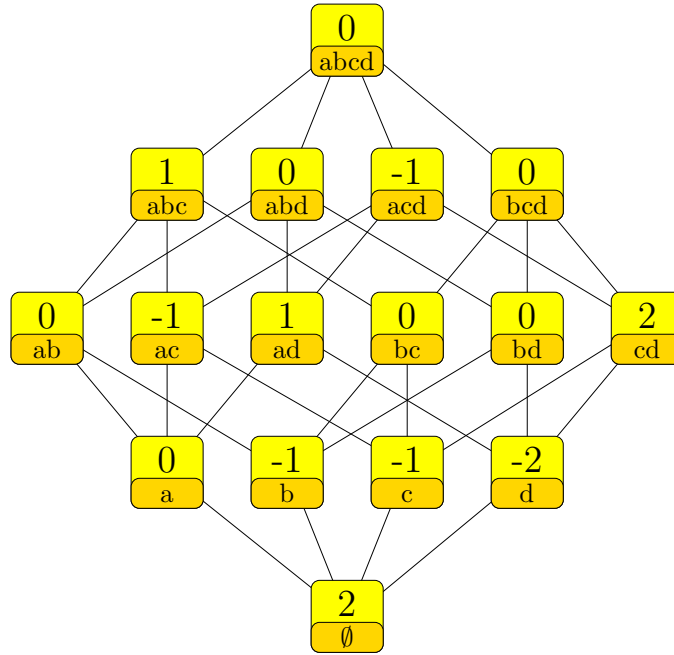
2.18.9.2 Differential imset (302)



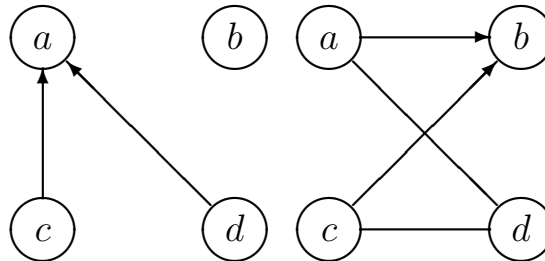
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,c\}} + 2\delta_{\{b,d\}} + \delta_{\{c,d\}} - 2\delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,b|c \rangle} - u_{\langle b,c|d \rangle} \\
 &= (\delta_\emptyset - \delta_{\{b\}} + \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



2.18.9.3 Differential imset (303)



$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - 2\delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{a,d\}} + 2\delta_{\{c,d\}} + \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} - u_{\langle a,c|d \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



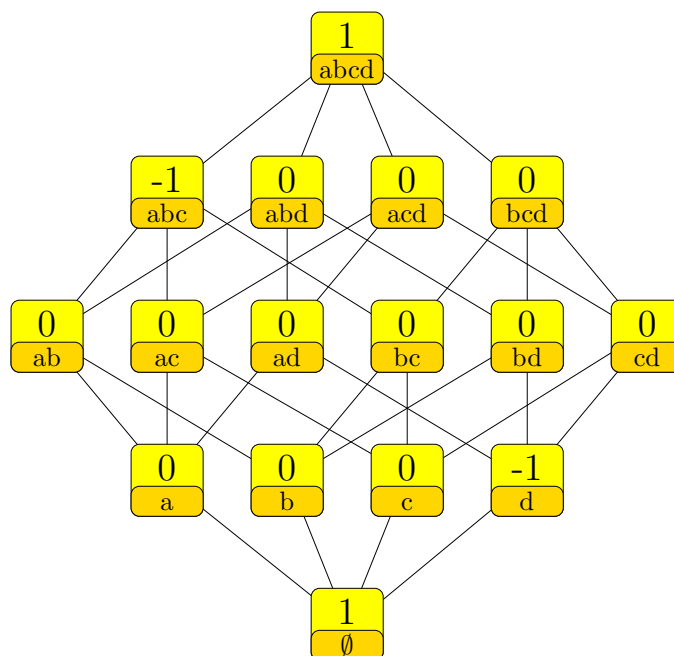
# Chapter 3

## Degree difference 3

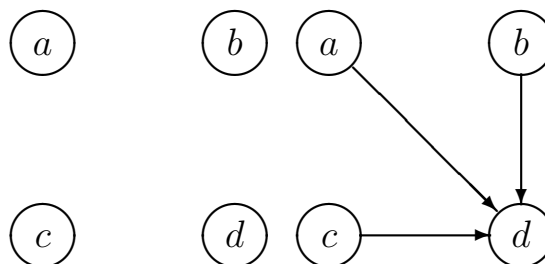
### 3.4 Squared Euclidean length 4

#### 3.4.4 Number of nonzero values 4

##### 3.4.4.1 Differential imset (304)



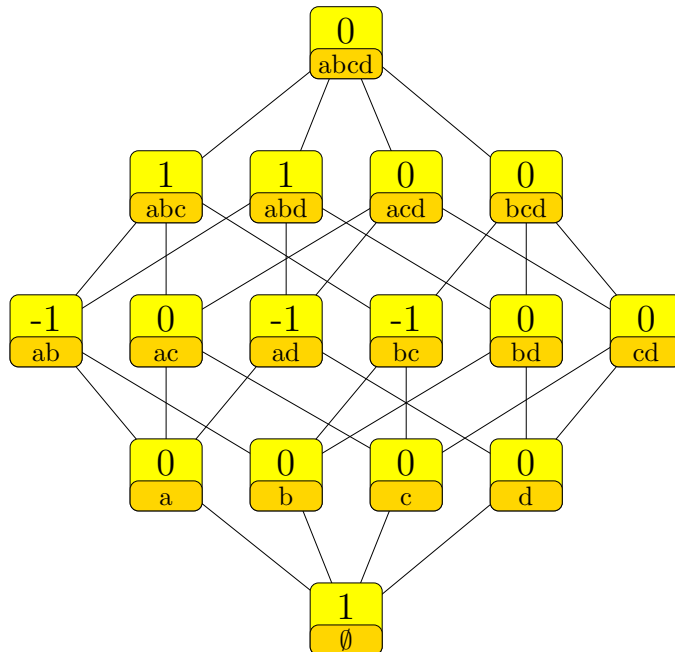
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,d|a \rangle} \\
 &= (+3\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



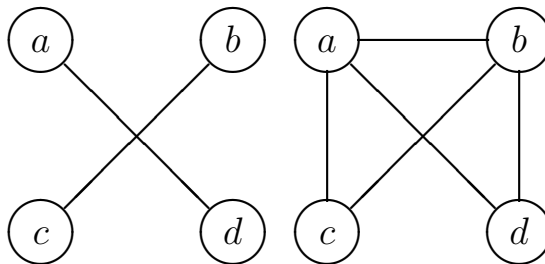
### 3.6 Squared Euclidean length 6

#### 3.6.6 Number of nonzero values 6

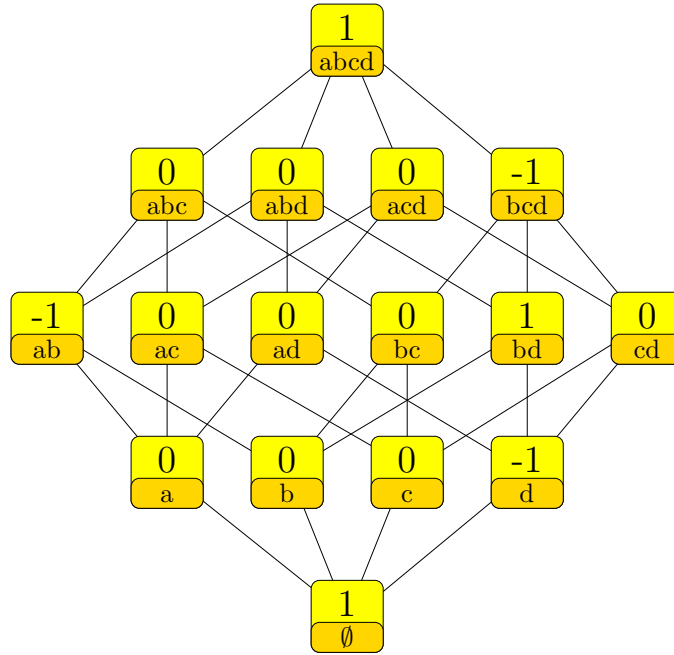
##### 3.6.6.1 Differential inset (305)



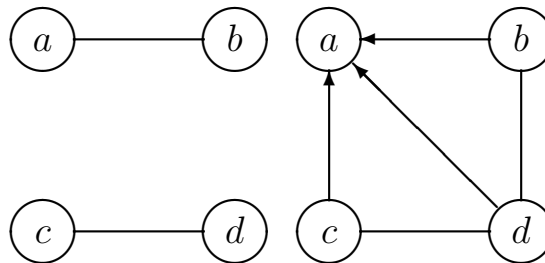
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle b,d|a \rangle} + u_{\langle a,c|b \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a,d\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,b\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



3.6.6.2 Differential imset (306)



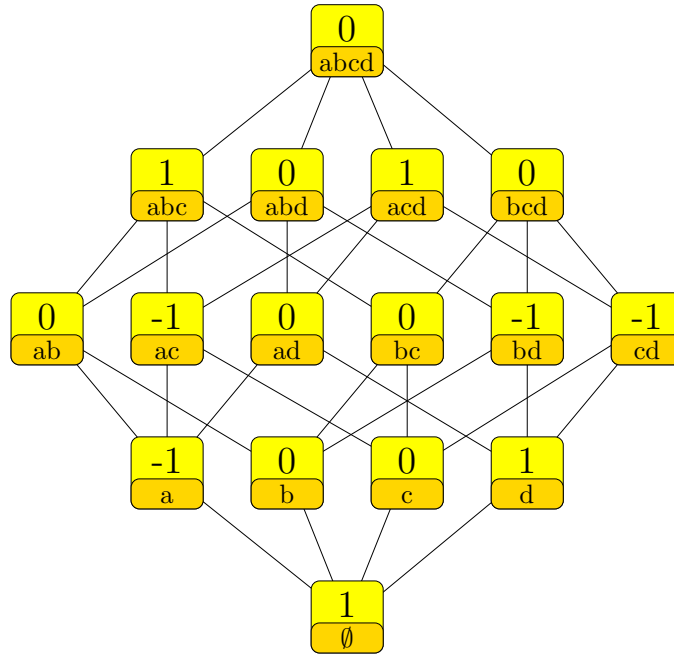
$$\begin{aligned}
 & \delta_\emptyset - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} \\
 &= (\delta_\emptyset - \delta_{\{a,b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{b,c,d\}})
 \end{aligned}$$



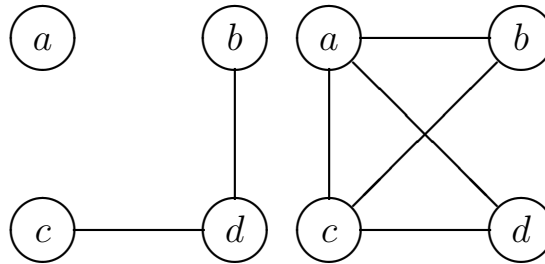
### 3.8 Squared Euclidean length 8

#### 3.8.8 Number of nonzero values 8

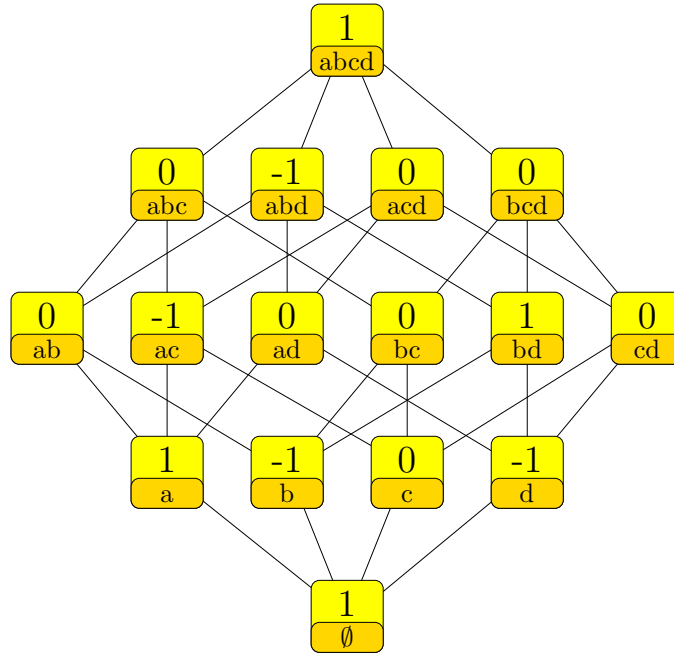
##### 3.8.8.1 Differential inset (307)



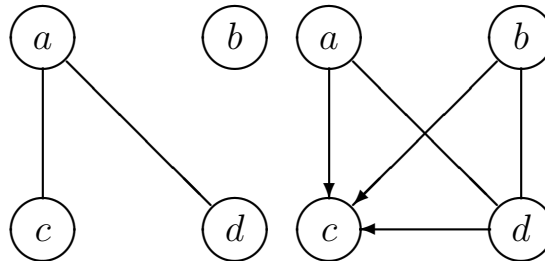
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{a,c\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} - u_{\langle b,d|ac \rangle} + u_{\langle a,d|bc \rangle} + u_{\langle a,c|b \rangle} + u_{\langle b,c|d \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{a\}} + \delta_{\{d\}} - \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



3.8.8.2 Differential inset (308)



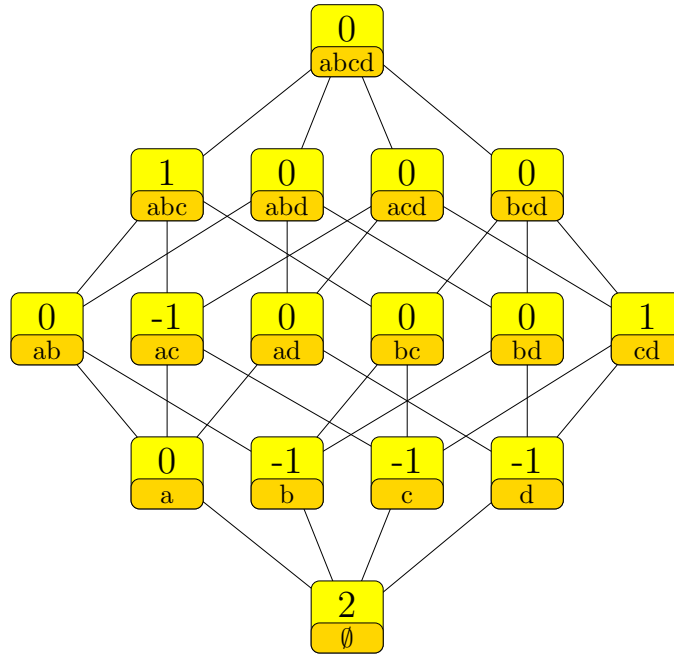
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}})
 \end{aligned}$$



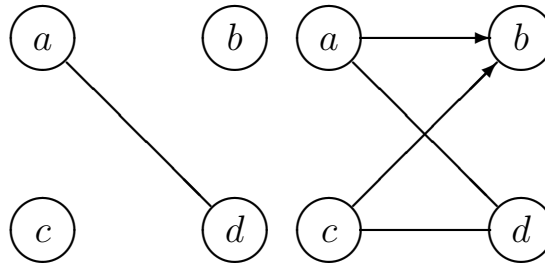
### 3.10 Squared Euclidean length 10

#### 3.10.7 Number of nonzero values 7

##### 3.10.7.1 Differential imset (309)

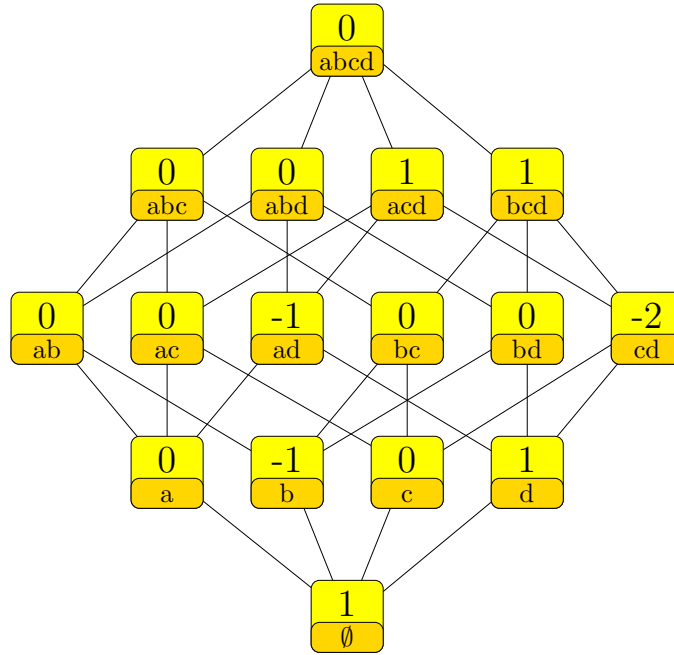


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} - \delta_{\{a,c\}} + \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,c\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

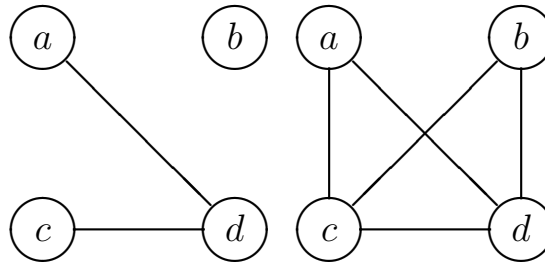




3.10.7.2 Differential imset (310)



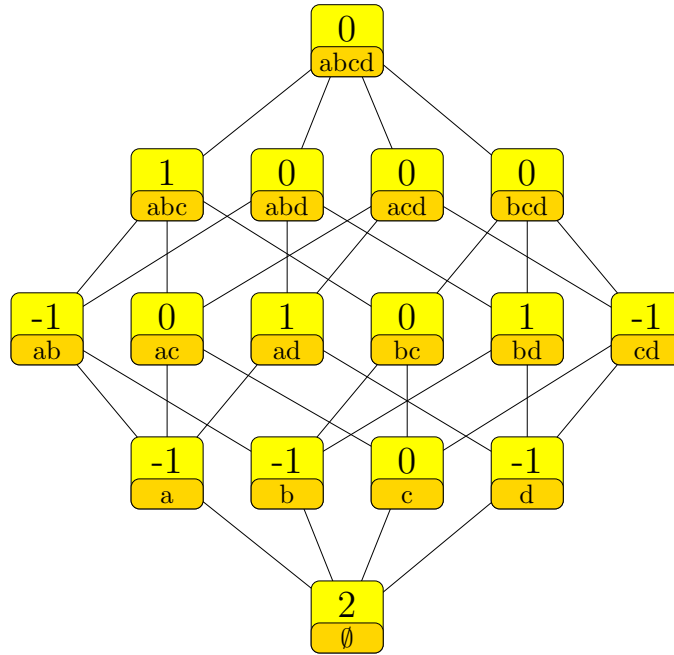
$$\begin{aligned}
 & \delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - 2\delta_{\{c,d\}} + \delta_{\{a,c,d\}} + \delta_{\{b,c,d\}} \\
 &= u_{\langle b,c|\emptyset \rangle} + u_{\langle a,c|d \rangle} + u_{\langle b,d|c \rangle} \\
 &= (\delta_{\emptyset} - \delta_{\{b\}} + \delta_{\{d\}} - \delta_{\{a,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



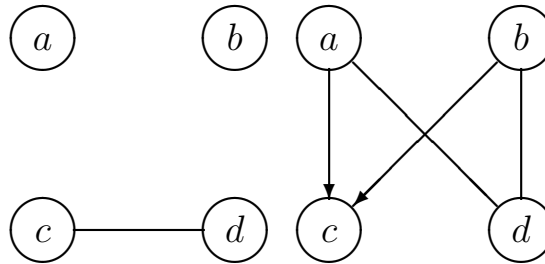
### 3.12 Squared Euclidean length 12

#### 3.12.9 Number of nonzero values 9

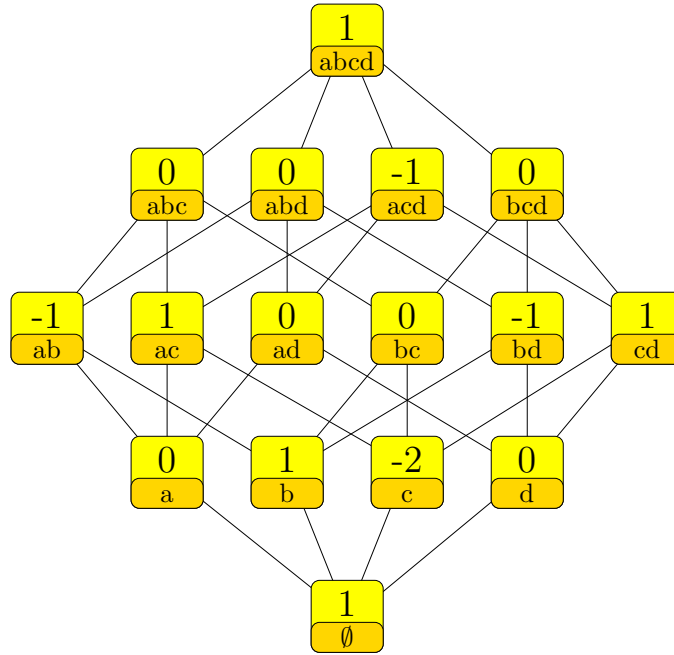
##### 3.12.9.1 Differential imset (311)



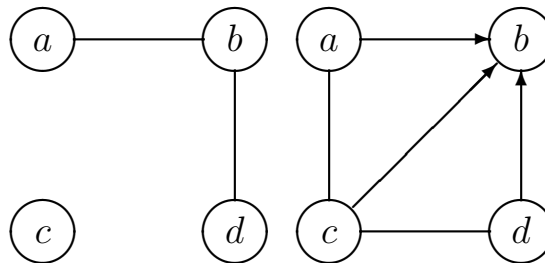
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} - u_{\langle c,d|\emptyset \rangle} + u_{\langle b,c|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$



3.12.9.2 Differential imset (312)



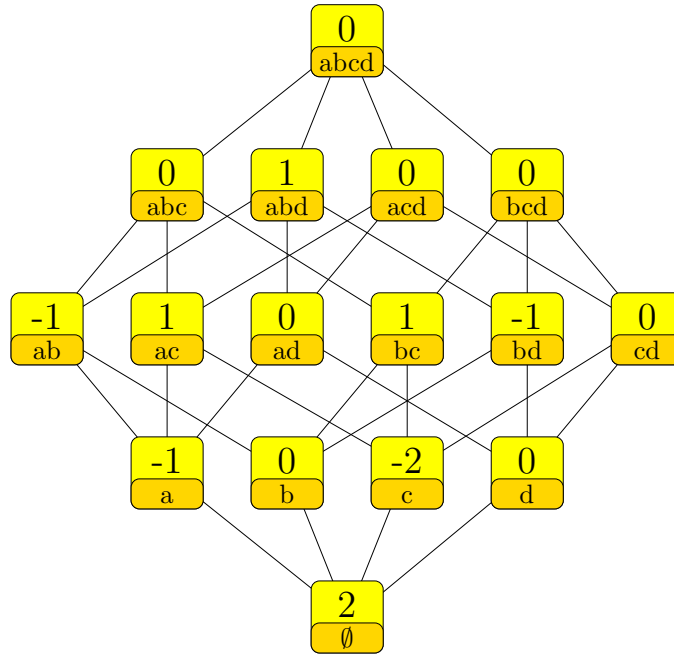
$$\begin{aligned}
 & \delta_{\emptyset} + \delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{b,d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|ab \rangle} + u_{\langle b,c|a \rangle} + u_{\langle a,d|b \rangle} - u_{\langle a,d|c \rangle} \\
 &= (\delta_{\emptyset} + \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,b\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{c,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



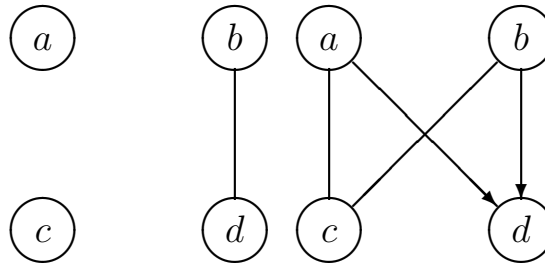
### 3.14 Squared Euclidean length 14

#### 3.14.8 Number of nonzero values 8

##### 3.14.8.1 Differential imset (313)

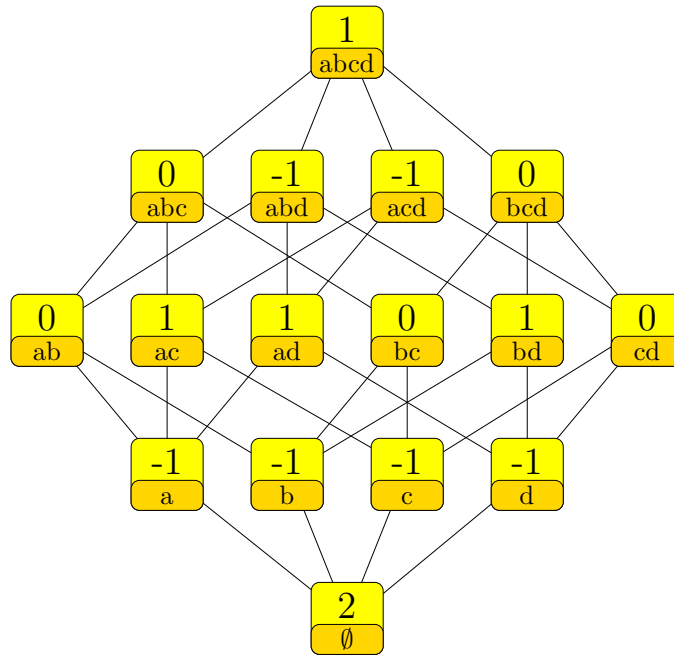


$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{a\}} - 2\delta_{\{c\}} - \delta_{\{a,b\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,d\}} \\
 &= u_{\langle a,c|\emptyset \rangle} + u_{\langle b,c|\emptyset \rangle} + u_{\langle a,d|b \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{c\}} - \delta_{\{b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

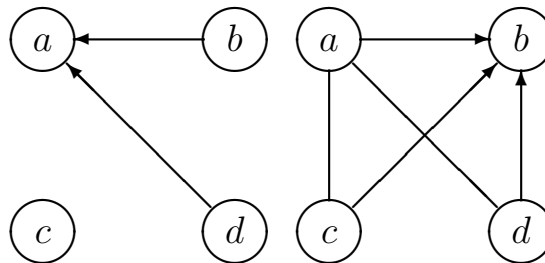


3.14.11 Number of nonzero values 11

3.14.11.1 Differential imset (314)



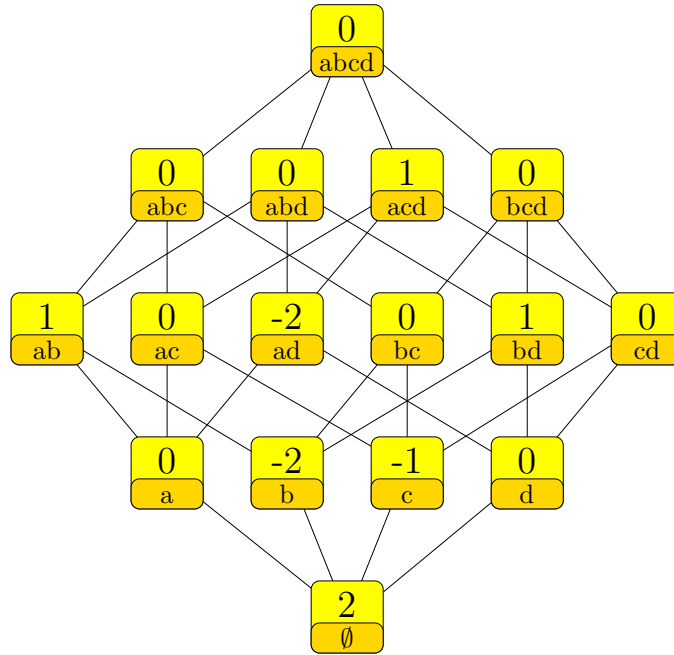
$$\begin{aligned}
 &+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,c|\emptyset\rangle} + u_{\langle b,d|\emptyset\rangle} + u_{\langle b,c|ad\rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$



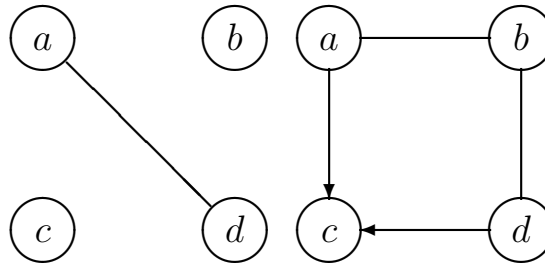
### 3.16 Squared Euclidean length 16

#### 3.16.7 Number of nonzero values 7

##### 3.16.7.1 Differential imset (315)

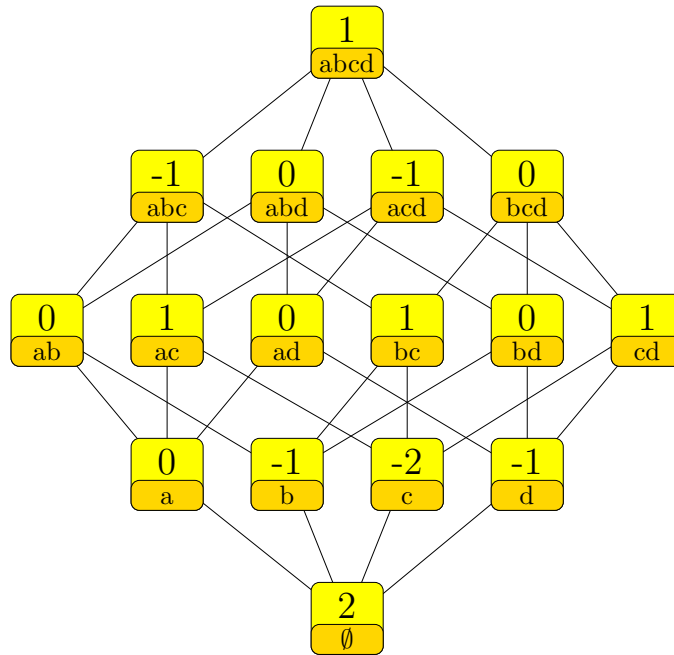


$$\begin{aligned}
 &+2\delta_\emptyset - 2\delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - 2\delta_{\{a,d\}} + \delta_{\{b,d\}} + \delta_{\{a,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} - u_{\langle a,d|\emptyset \rangle} + u_{\langle b,d|\emptyset \rangle} + u_{\langle c,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{a,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{b\}} - \delta_{\{a,b\}} + \delta_{\{a,d\}} - \delta_{\{b,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}})
 \end{aligned}$$

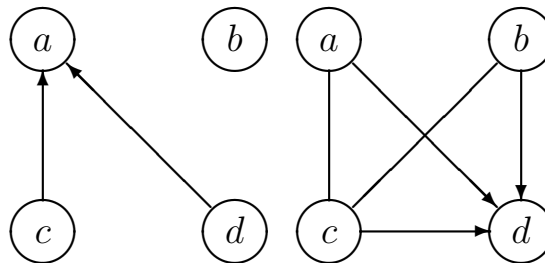


3.16.10 Number of nonzero values 10

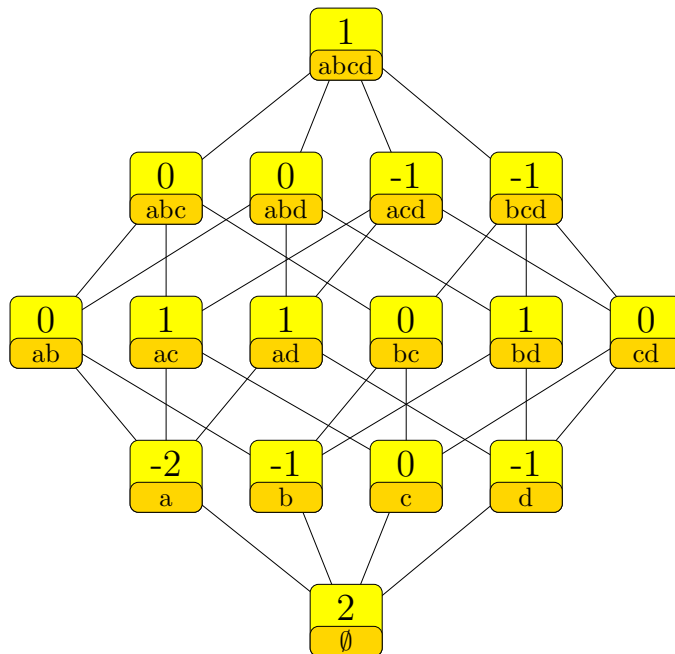
3.16.10.1 Differential imset (316)



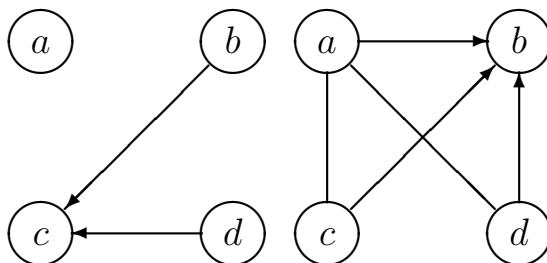
$$\begin{aligned}
 &+2\delta_\emptyset - \delta_{\{b\}} - 2\delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{b,c\}} + \delta_{\{c,d\}} - \delta_{\{a,b,c\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle b,c|\emptyset\rangle} + u_{\langle c,d|\emptyset\rangle} + u_{\langle b,d|ac\rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{b\}} - \delta_{\{c\}} - \delta_{\{d\}} + \delta_{\{c,d\}} - \delta_{\{a,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{c\}} - \delta_{\{a,c\}} - \delta_{\{b,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



3.16.10.2 Differential imset (317)



$$\begin{aligned}
 &+2\delta_\emptyset - 2\delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,c\}} + \delta_{\{a,d\}} + \delta_{\{b,d\}} - \delta_{\{a,c,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,d|\emptyset \rangle} + u_{\langle a,c|bd \rangle} + u_{\langle b,d|a \rangle} - u_{\langle c,d|a \rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{b,d\}} - \delta_{\{b,c,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,c\}} - \delta_{\{a,d\}} + \delta_{\{a,c,d\}})
 \end{aligned}$$

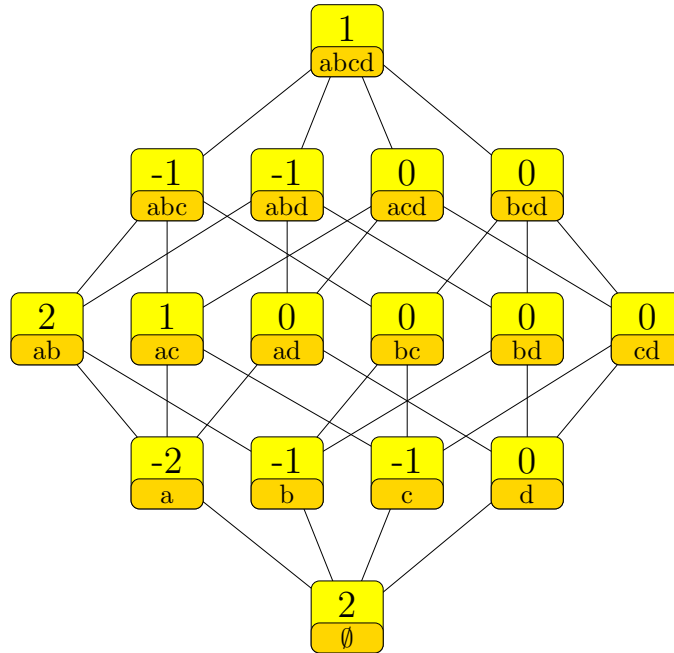




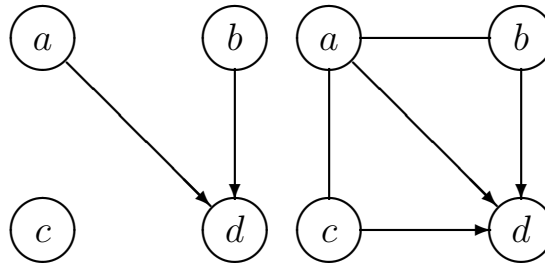
### 3.18 Squared Euclidean length 18

#### 3.18.9 Number of nonzero values 9

##### 3.18.9.1 Differential imset (318)



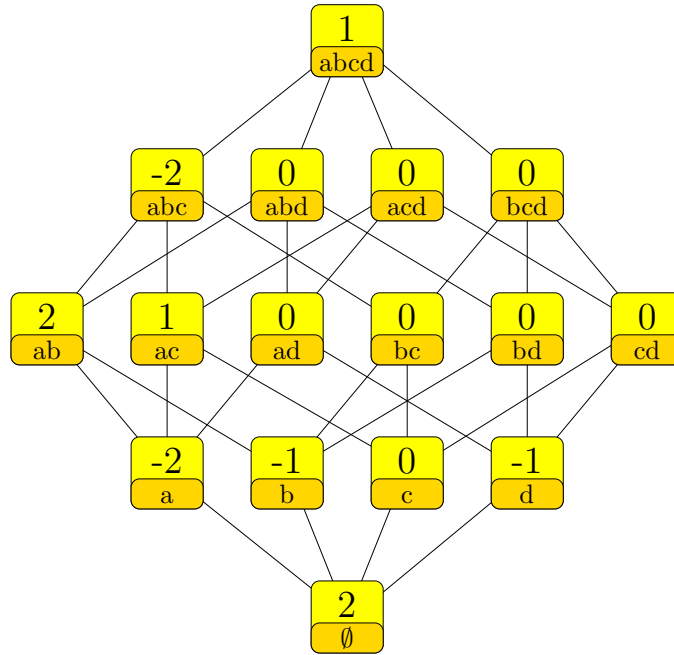
$$\begin{aligned}
 &+2\delta_{\emptyset} - 2\delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + 2\delta_{\{a,b\}} + \delta_{\{a,c\}} - \delta_{\{a,b,c\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset \rangle} + u_{\langle a,c|\emptyset \rangle} + u_{\langle c,d|ab \rangle} \\
 &= (+2\delta_{\emptyset} - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{c\}} + \delta_{\{a,b\}} - \delta_{\{a,b,d\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$



### 3.20 Squared Euclidean length 20

#### 3.20.8 Number of nonzero values 8

##### 3.20.8.1 Differential imset (319)



$$\begin{aligned}
 &+2\delta_\emptyset - 2\delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + 2\delta_{\{a,b\}} + \delta_{\{a,c\}} - 2\delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}} \\
 &= u_{\langle a,b|\emptyset\rangle} + u_{\langle a,d|\emptyset\rangle} + u_{\langle c,d|ab\rangle} - u_{\langle b,c|a\rangle} + u_{\langle b,d|a\rangle} \\
 &= (+2\delta_\emptyset - \delta_{\{a\}} - \delta_{\{b\}} - \delta_{\{d\}} + \delta_{\{a,b\}} - \delta_{\{a,b,c\}} + \delta_{\{a,b,c,d\}}) \\
 &\quad - (\delta_{\{a\}} - \delta_{\{a,b\}} - \delta_{\{a,c\}} + \delta_{\{a,b,c\}})
 \end{aligned}$$

