Networks and Complexity

Solution 1-3

This is an example solution from the forthcoming book Networks and Complexity.
Find more exercises at https://github.com/NC-Book/NCB

Ex 1.3: Number of networks [1]

Compute the number of different networks that can be constructed between 7 labeled nodes.

Solution

First we compute the number of links. Using the trick from the previous question we find $K_{\max} = 7 \cdot 3 = 21$. Every link can be there or not, so two possible options per link. Therefore the number of networks is

$$M = 2^{21} = 2097152. \tag{1}$$