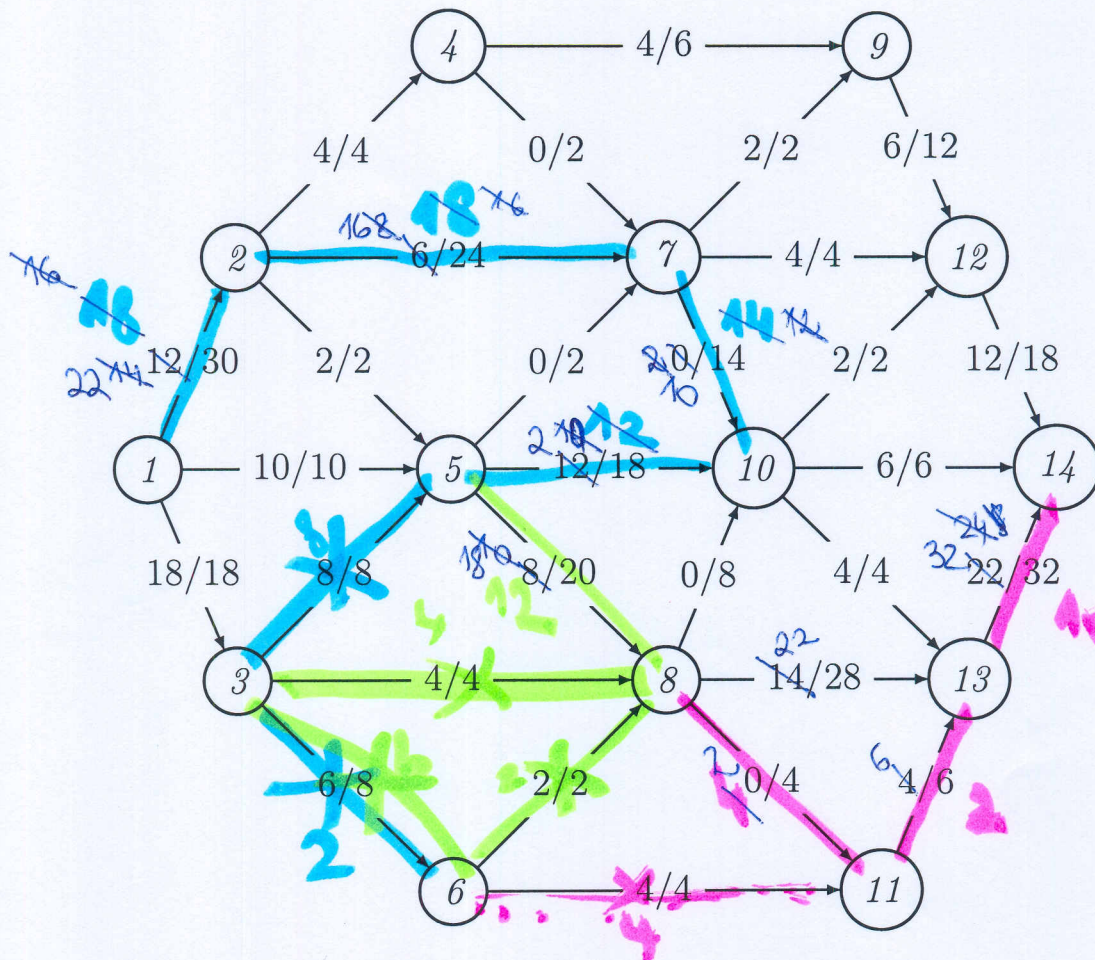
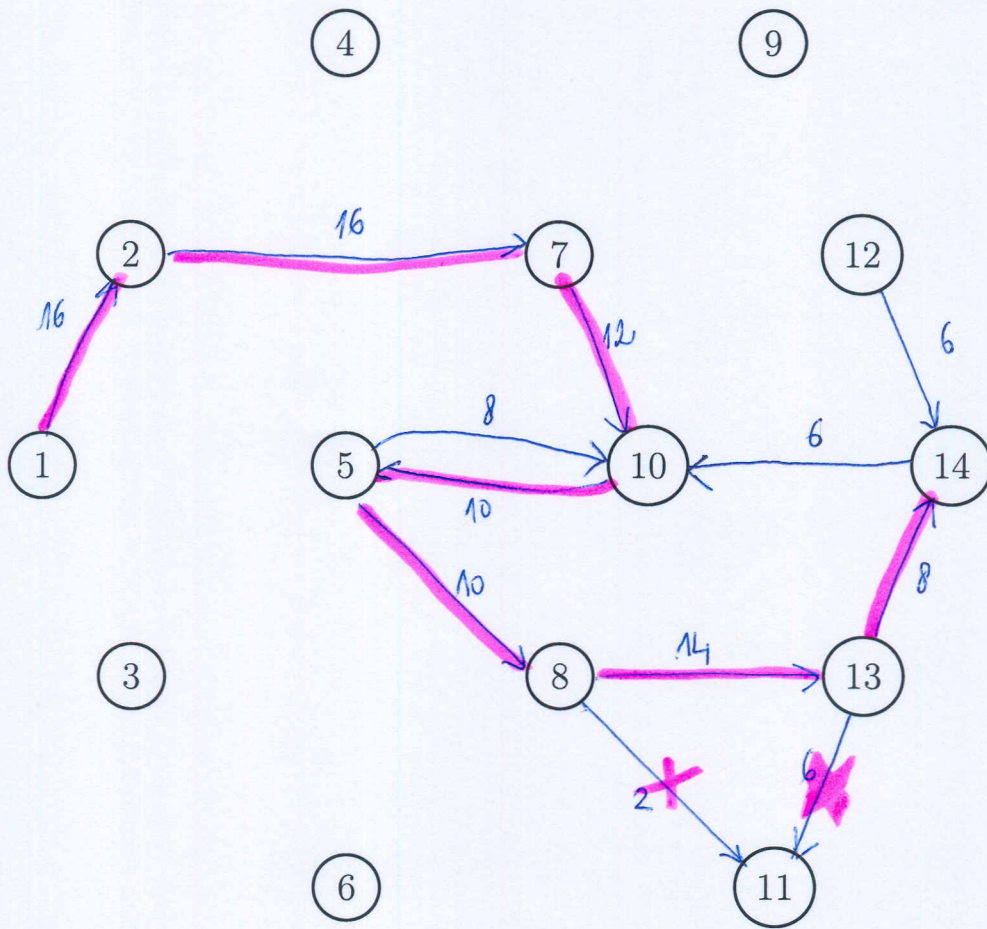


11. demonstrační cvičení

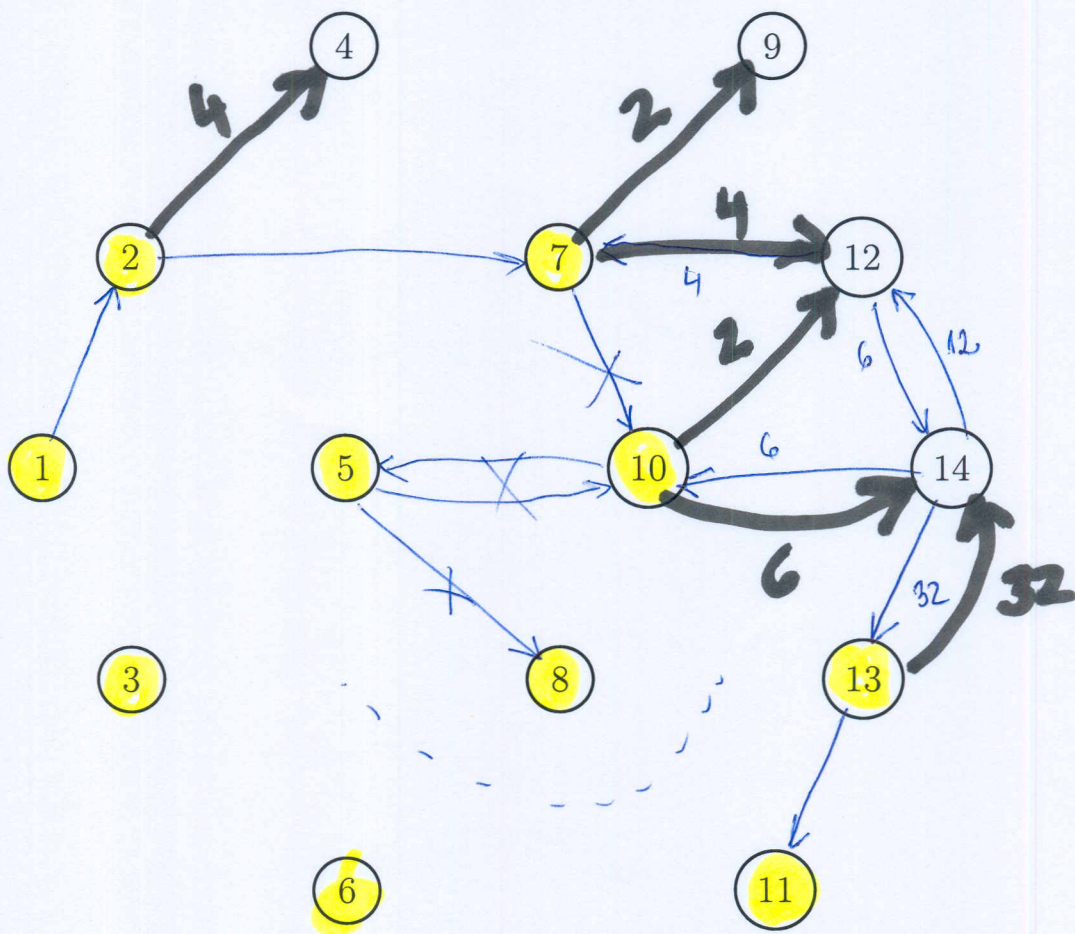
Příklad 74. Nalezněte maximální tok a minimální řez v síti na obrázku (zdroj=1, stok=14).



$$1 \xrightarrow{18} 2 \xrightarrow{16} 7 \xrightarrow{14} 10 \xleftarrow{12} 5 \xrightarrow{12} 8 \xrightarrow{4} 11 \xrightarrow{2} 13 \xrightarrow{10} 14 \quad r.2$$



$1 \xrightarrow{16} 2 \xrightarrow{16} 7 \xrightarrow{12} 10 \xleftrightarrow{10} 5 \xrightarrow{10} 8 \xrightarrow{14} 13 \xrightarrow{8} 14$ r. 8



tok 50

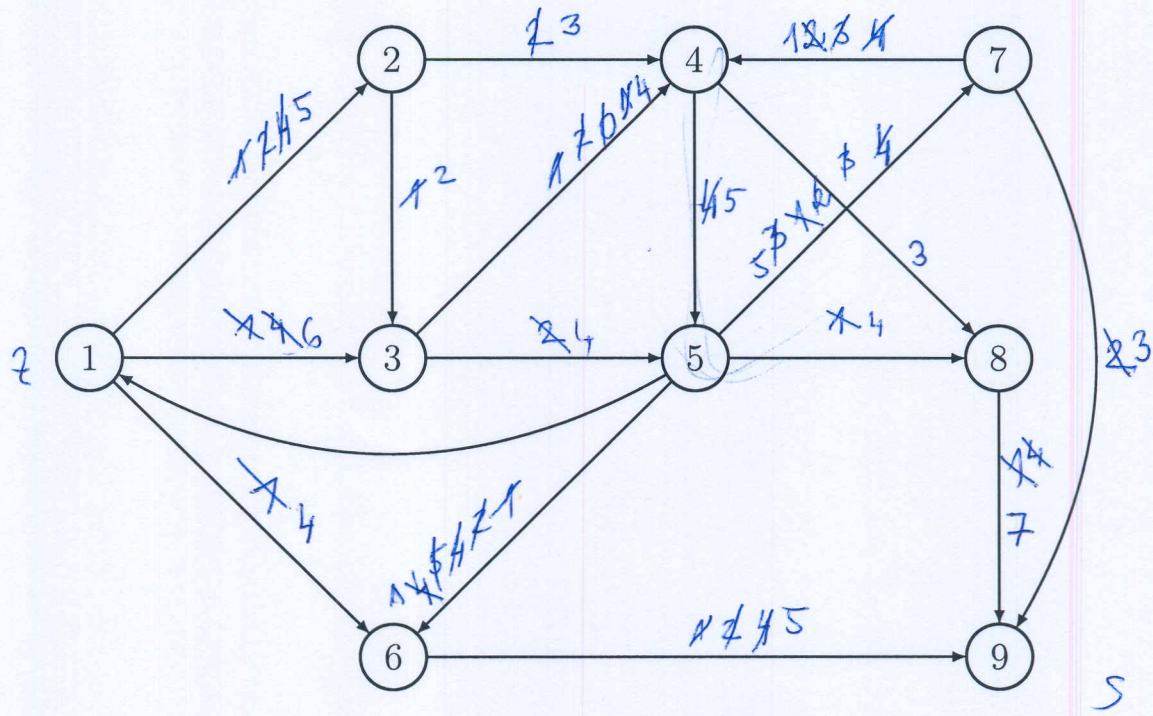
U

minimální rez

0 V \ V

Rez ... hrany z U do V-U
 celkem 50

tok = rez



1 → 2 → 3 → 4 → 5 → 6 → 9 r.1

1 → 2 → 3 → 4 → 7 → 5 → 6 → 9 r.1

1 → 2 → 4 → 3 → 5 → 6 → 9 r.2

1 → 2 → 4 → 7 → 5 → 6 → 9
~~1 → 2 → 4 → 7 → 5 → 3~~
 2 → 6 → 9 r.1

~~1 → 2~~

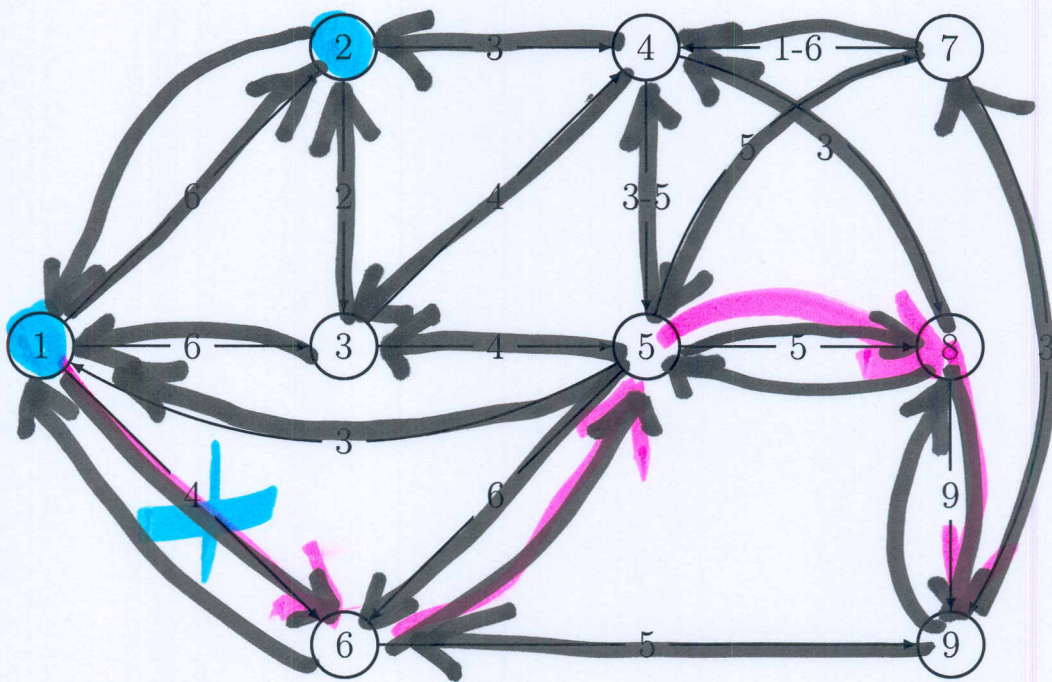
6 → 3 ~~2~~

4 → 4 → 7 → 5 → 8 → 9 r.1

1 → 3 → 4 → 8 → 5 → 6
 8 → 9 r.3

1 → 3 → 5 → 7 → 9 r.2

1 → 6 → 5 → 3 → 7 → 9 r.1
~~5 → 3~~
~~5 → 4~~



$$1 \xrightarrow{3} 6 \xleftarrow{4} 5 \xrightarrow{4} 8 \xrightarrow{5} 9 \quad r.3$$

úprava vz. grafu

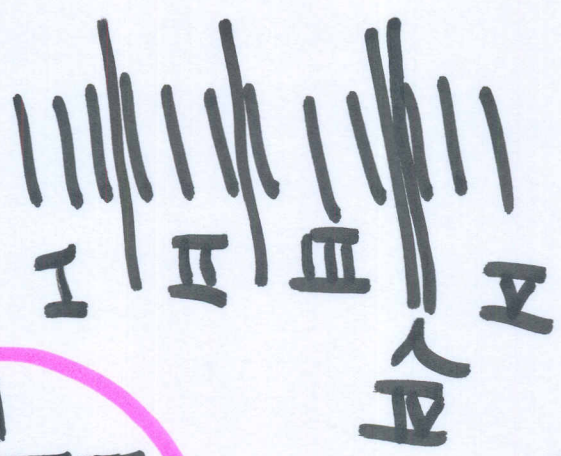
$$U = \{1, 2, 3\}$$

$$\checkmark \text{řez} = \{ [1,6], [1,3], [2,4], [2,3] \}$$

4
6
3
2

tok ⁸⁸ 15 \Rightarrow max. tok
 \Rightarrow min. řez

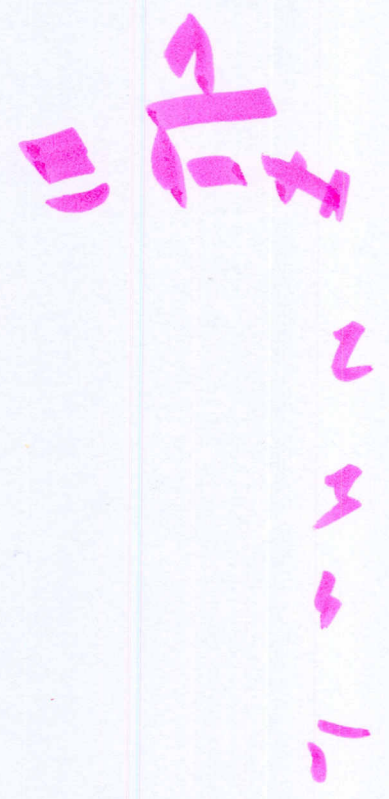
76



$$\binom{12+4}{4}$$

$$= \frac{1}{(1-x)^5}$$

$$= (1+x+x^2+x^3+\dots+x^{12}) \cdot (1+x+x^2+\dots+x^{12}) \cdot \dots$$



$$= a_{12} x^{12}$$

$\frac{1}{(1-x)^5} \xleftrightarrow{\text{v.t.p.}} a_n$ (#~~z~~ a_n kolu 5 dudu)

aspon 2 belog # dudu

(76) Sudý počet balíčků

$$(1 + x^2 + x^4 + \dots)^5$$

$$(1 + x + x^2 + x^3)$$

$$(1 + x + x^2 + \dots + x^4)^5 =$$

$$= \frac{1}{(1-x)^5} \cdot \frac{x^5 - 1}{(x-1)}$$