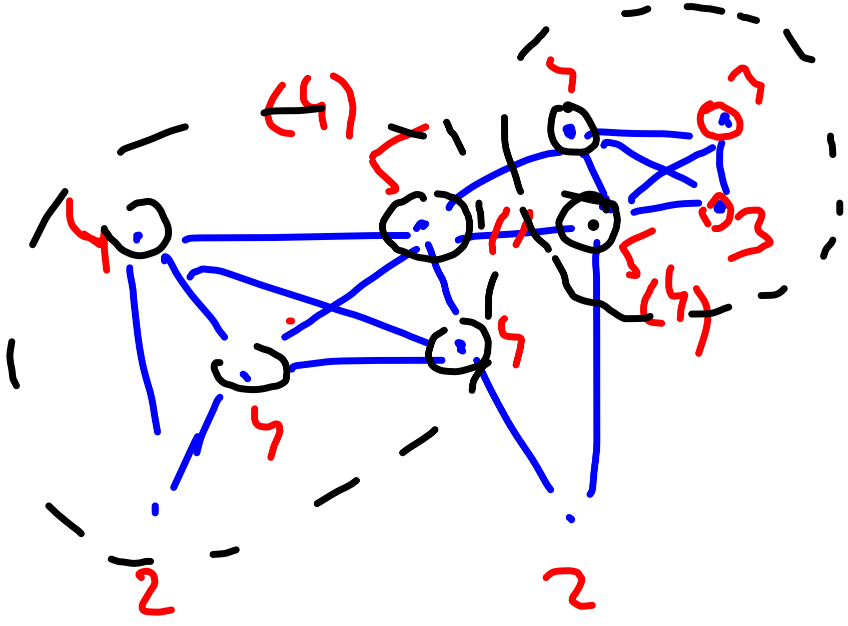
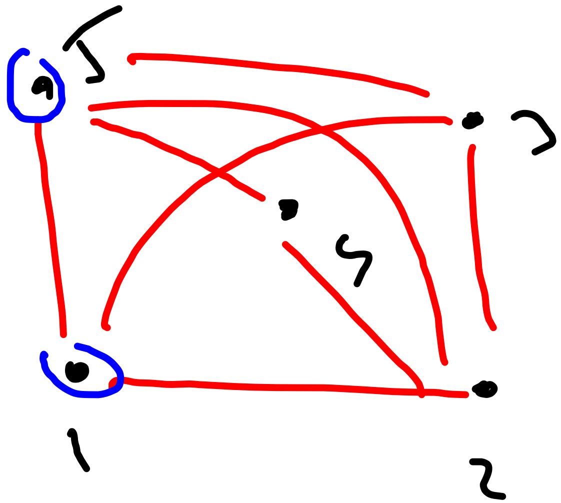


a) (5,5,4,4,4,3,3,2,2)

b) . 4 —

c) - 4 —

d) (5,5,4,4,4,3,3,3,2)



✓

26

$(5,5,4,2,1,1,1,1)$

$\downarrow$

$(4,3,1,0,0,1,1)$

$\downarrow$

$(2,0,0,0,0,0)$

NE

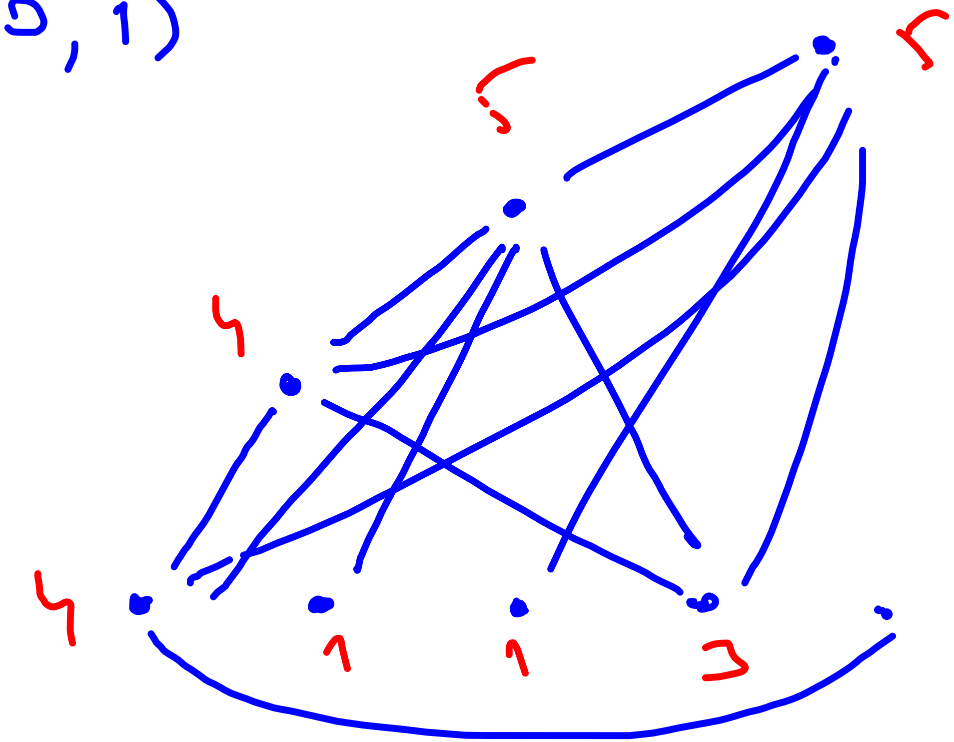
$(5,5,4,4,3,1,1,1)$

$(4,3,3,2,0,1,1)$

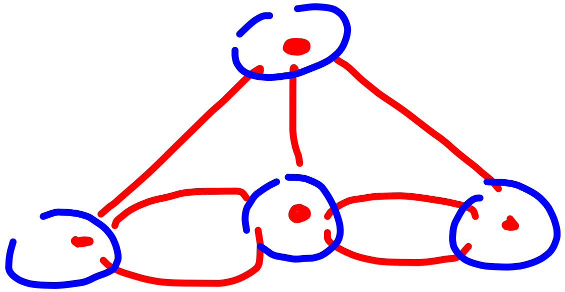
$(2,2,1,0,0,1)$

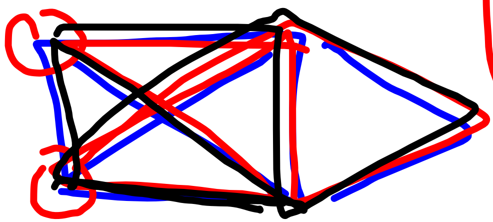
$(1,0,0,0,1)$

ANO



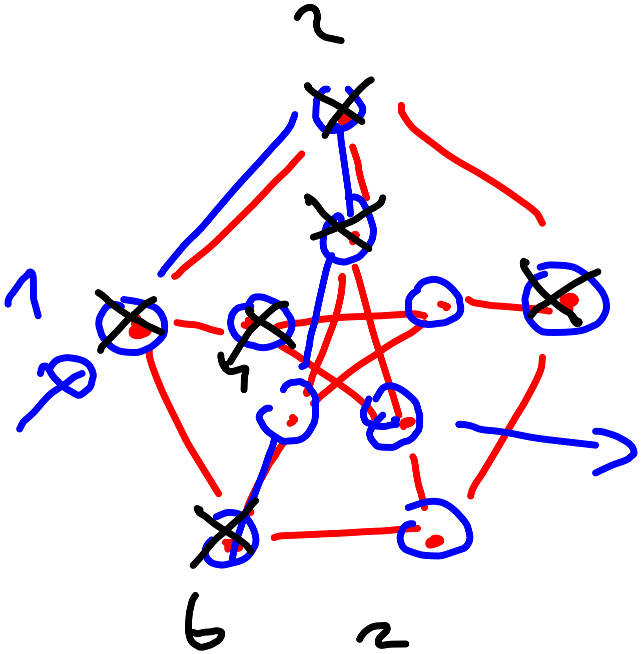
a) Eulerovy grafy: všechny hrany právě jednou

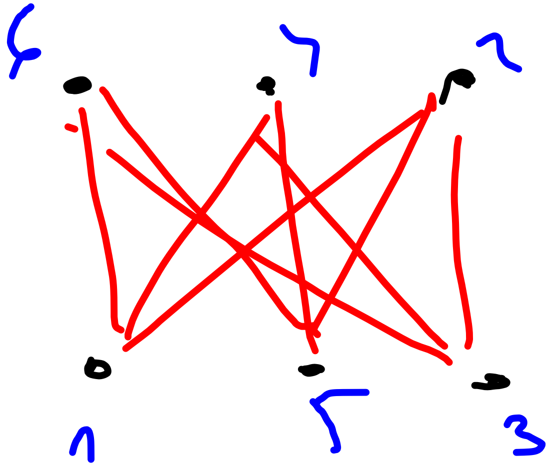


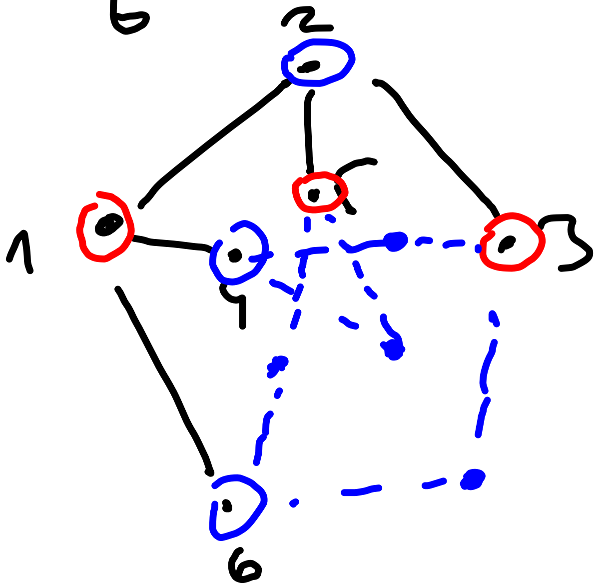


uzavřený el. ⟺ všechny stupně sudé!

b) Hamiltonovy kružnice: právě jednou každý vrchol (nejvýše jednou každou hranu)

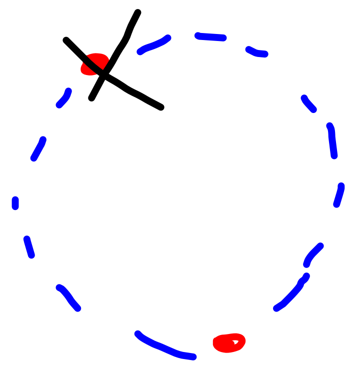

2
1
6


4
7
2
1
5
3


2
1
3
6

Souvislé komponenty: max. souvislé části

Příklad: dokažte, že Hamiltonovský graf je vždy 2-souvislý.



Dlašt / grafy:

a) $G=(V,E)$ $|E|<9$

je rovinný?

ANO

b) G není rovinný $\Rightarrow$

není Kuratowského

NE ($K_{3,3}$ je)

c) G není rovinný $\Rightarrow$

je Kuratowského

NE

graf rovinný:

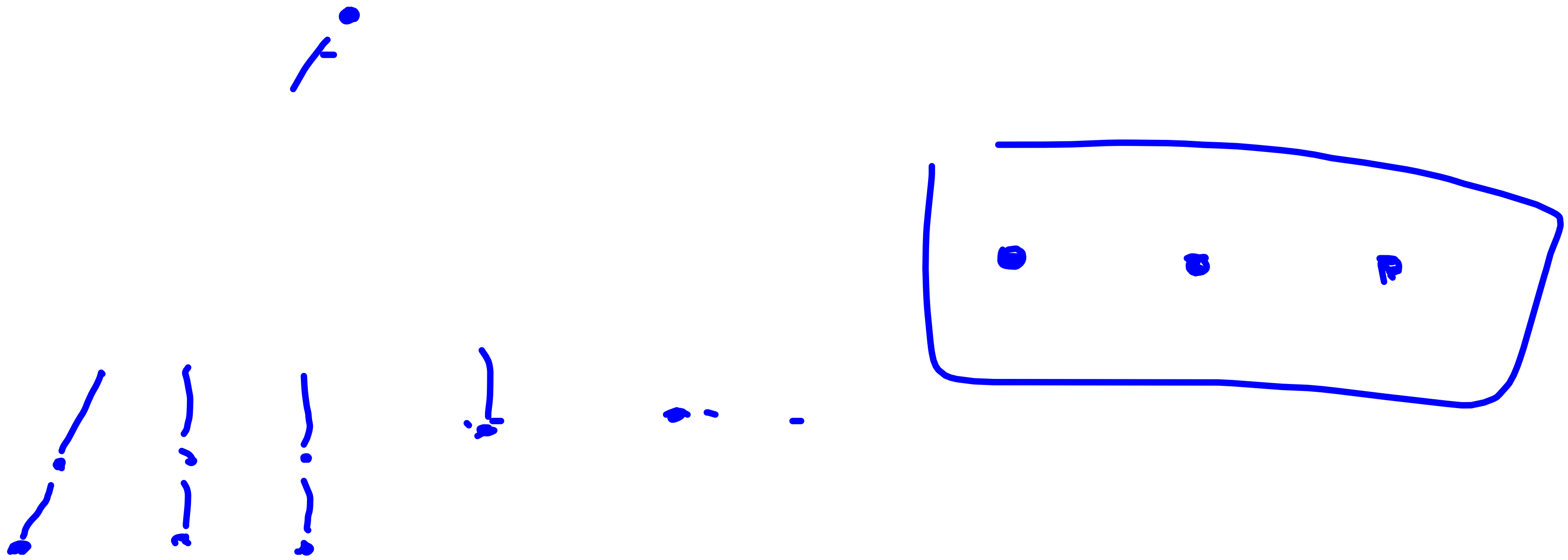
lze zakreslit v $\mathbb{R}^2$ bez křížení hran

K_5 $|E|=10$

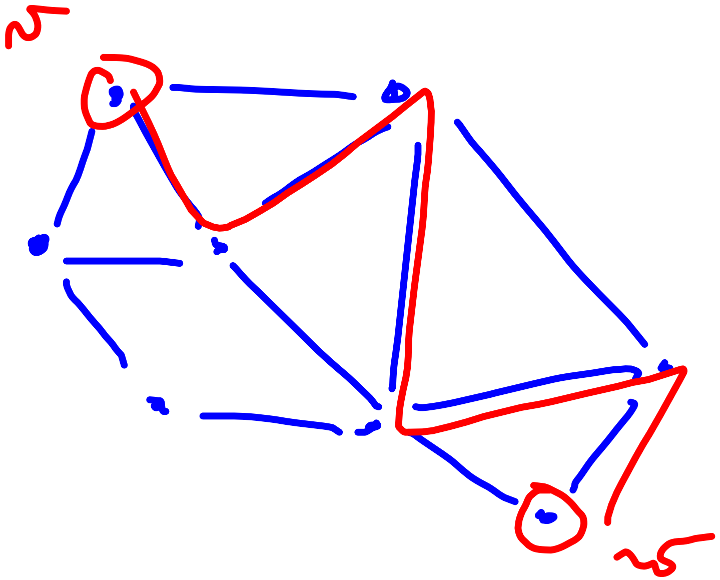
$K_{3,3}$ $|E|=9$

Strom: $G = (V, E)$ souvislý

$$\boxed{|V| = |E| + 1}$$



metriky na grafech: $d_G(v,w) =$ délka nejkratší cesty mezi v, w, resp. ∞ pokud neexistuje;

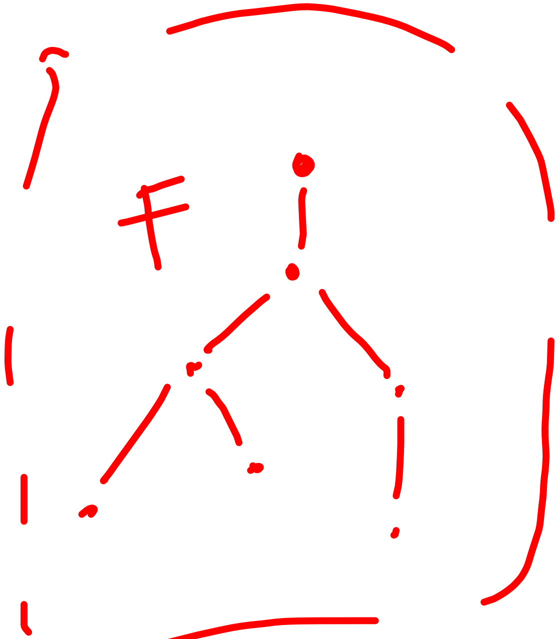


$d(v,w) = 3$

a) $d(v,w) = 0 \iff v = w$

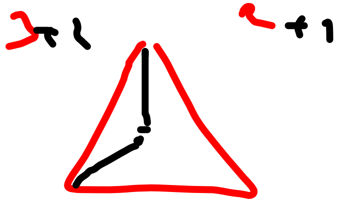
b) symetrie

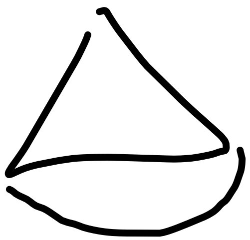
c) $\triangle$ nerovnost



rovinný $\Rightarrow$

$$\boxed{|V| - |E| + |F| = 2}$$



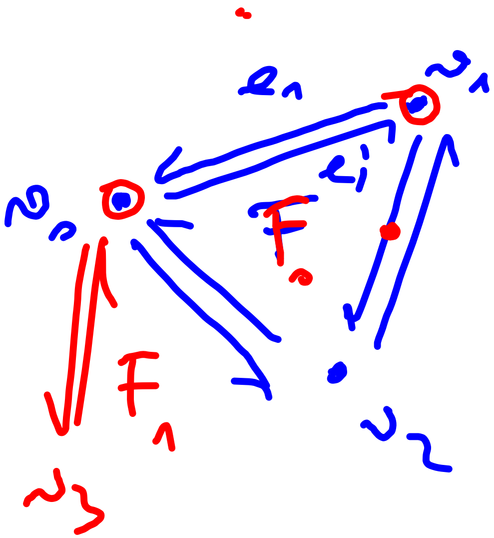


F .. stěny

E .. hrany

V .. vrcholy

DCEL



$$d(v, w) \leq d(v, z) + d(z, w)$$