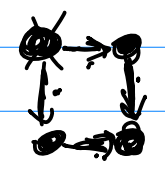


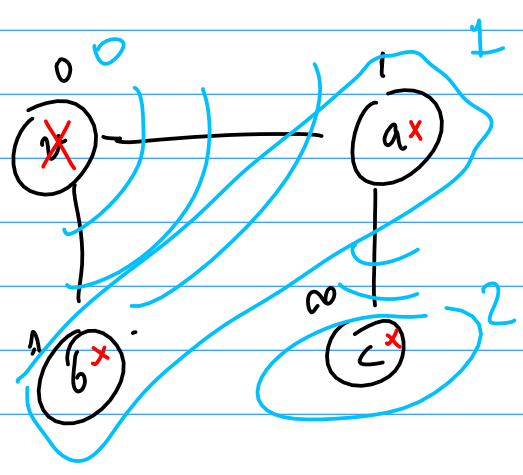
$$|V| = n$$

$$|E| = m$$

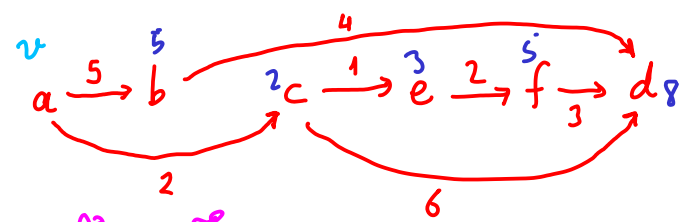
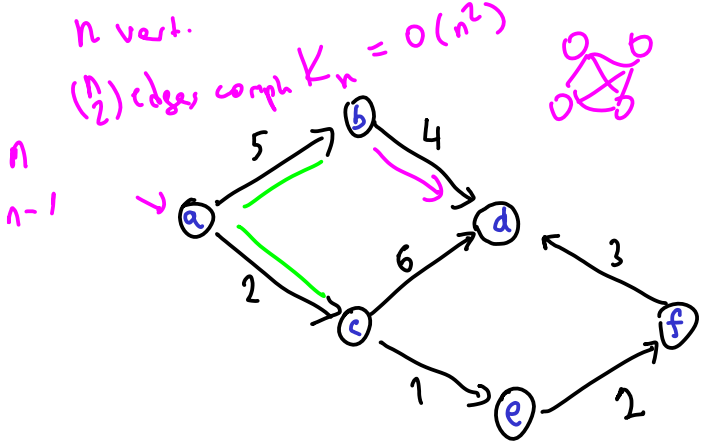
$$m > n$$



worst case $\rightarrow O(m)$
 $O(m+n)$?



S	v	a	b	c
$\{v\}$	0	∞	∞	∞
$\{v, a\}$	0	1	∞	∞
$\{v, a, b\}$	0	1	1	∞
$\{a, b, c\}$	0	1	1	2
$\{b, c\}$				
$\{c\}$				
$\{\}$				

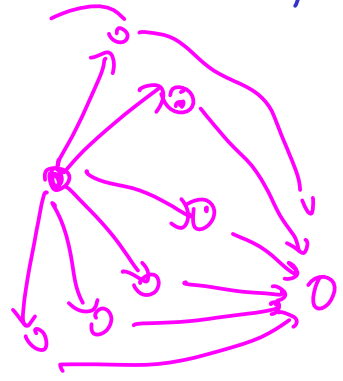


In a connected graph
 $O(m) \geq O(n)$

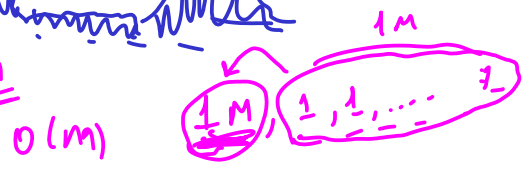
$O(m+n)$
 $O(m)$

	a	b	c	e	f	d
a	0	∞	∞	∞	∞	∞
b	0	5	2	∞	∞	∞
c	0	5	2	3	∞	8
e	0	5	2	3	5	8
f	0	5	2	3	5	8

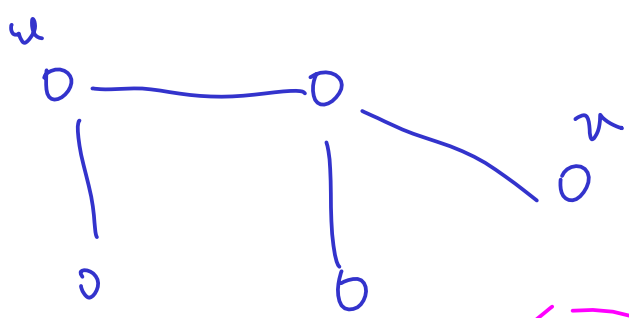
"Amortized analysis"



$|E| = 2M$



$n \cdot O(m)$
 $O(m \cdot n)$
 $O(m)$



$n=5$
 $m=?$

