

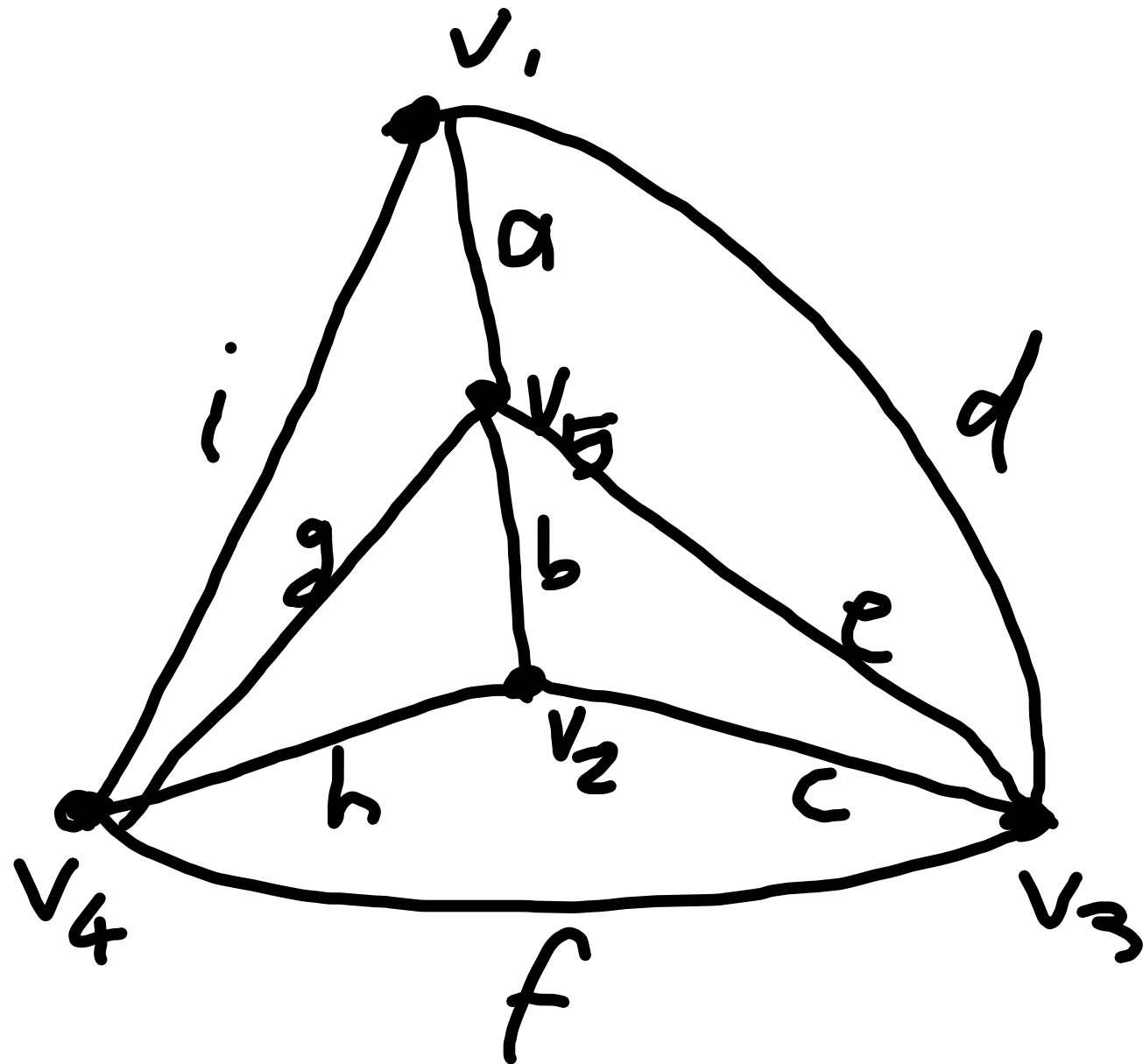
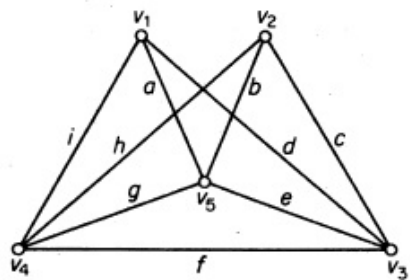
$$V = \{v_1, \dots, v_5\}$$

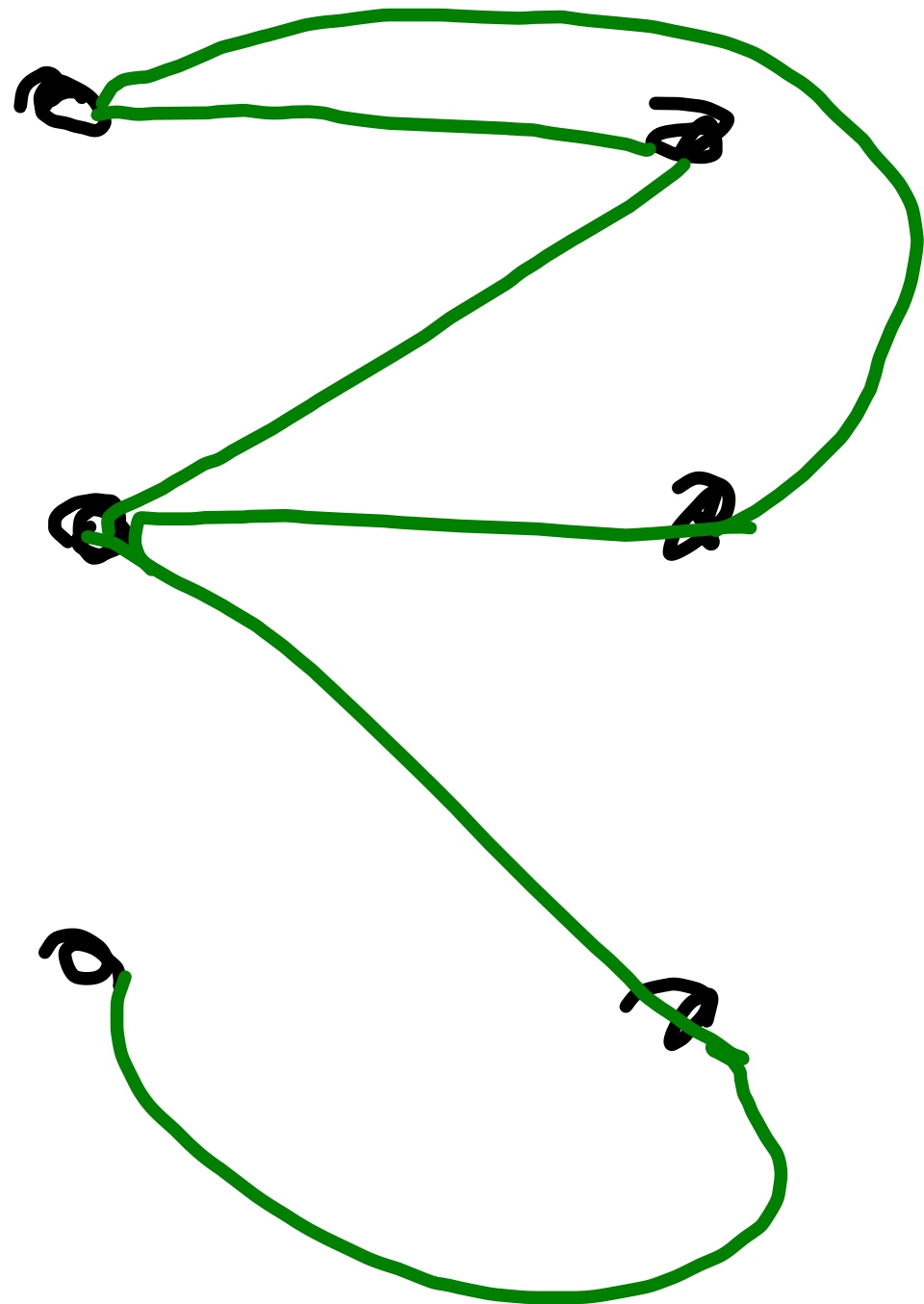
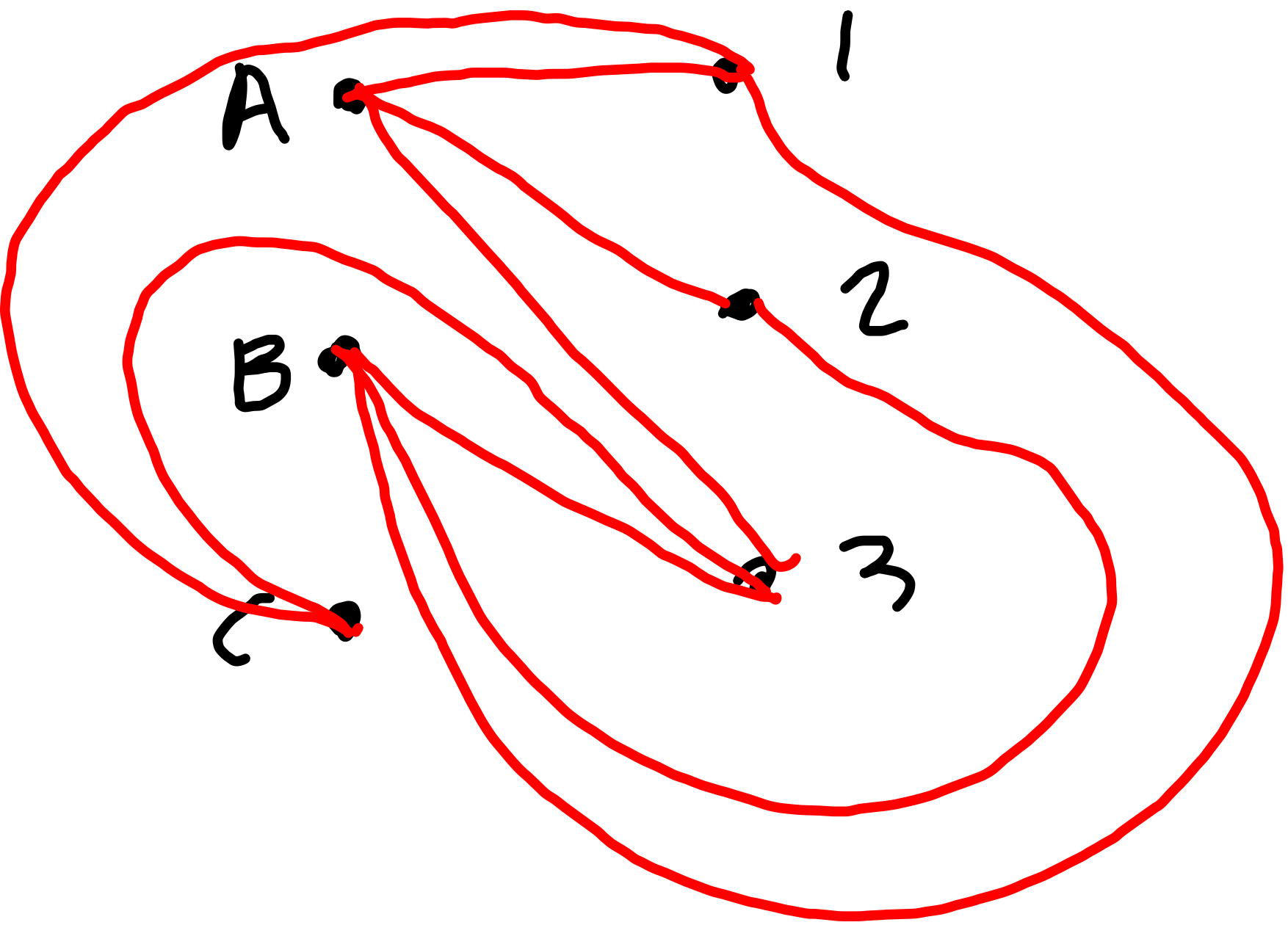
$$E = \{a, b, \dots, i\}$$

$$\psi(a) = v_1 v_5$$

$$\psi(b) = v_2 v_5$$

⋮





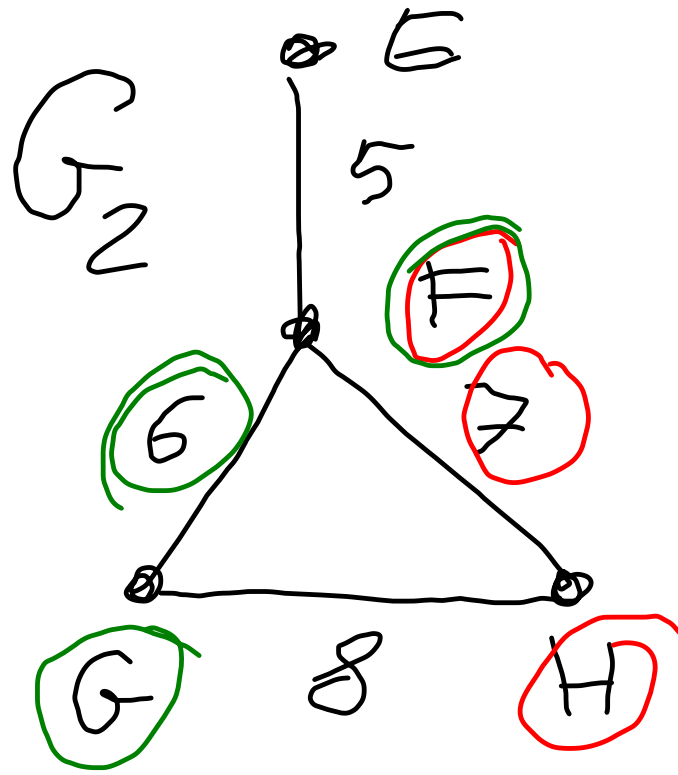
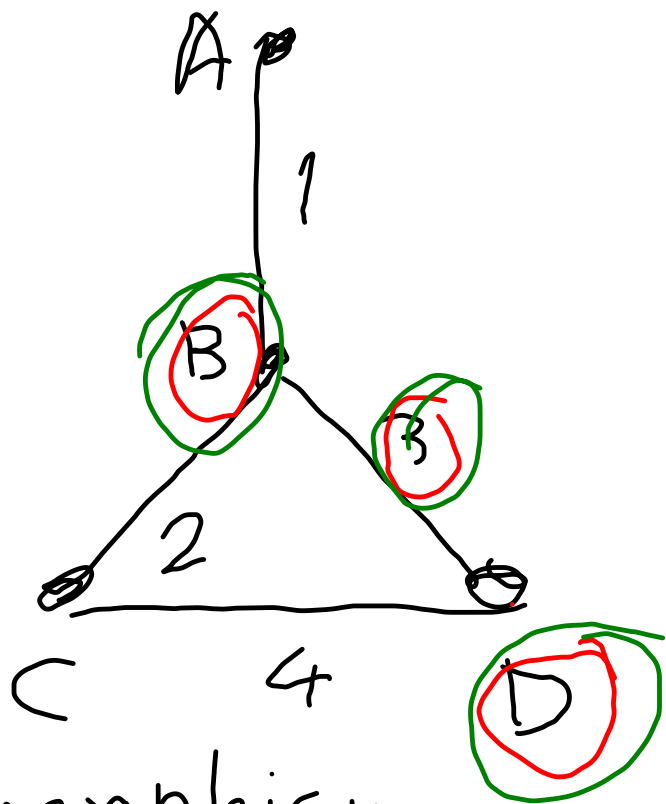
$$(x+y)^n = \binom{n}{0}x^n + \binom{n}{1}x^{n-1}y + \binom{n}{2}x^{n-2}y^2 + \binom{n}{n-1}xy^{n-1} + \binom{n}{n}y^n$$

$$\binom{n}{h} = \frac{n!}{h!(n-h)!} = \frac{n \cdot (n-1) \cdot \dots \cdot (n-h+1)}{h!}$$

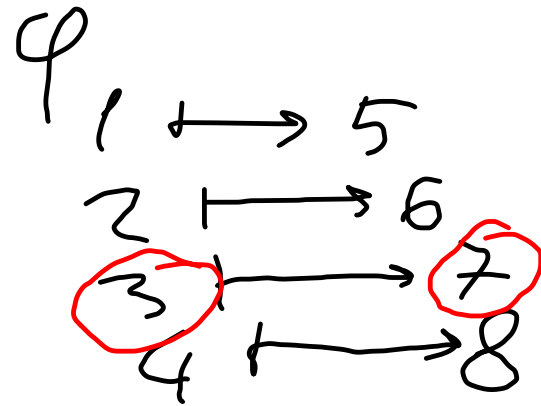
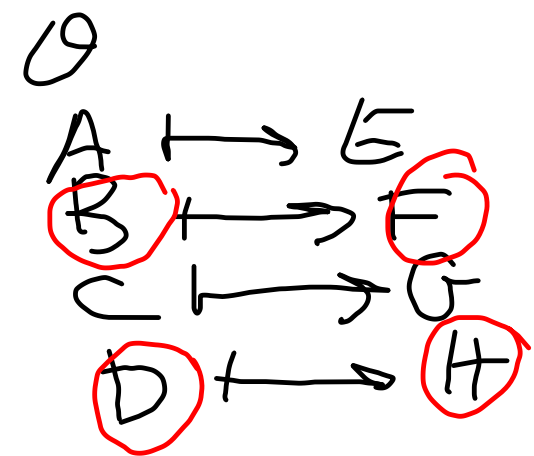
$$\binom{n}{2} = \frac{n \cdot (n-1)}{2}$$

$$(x+y)^n = \underbrace{(x+y) \cdot (x+y) \cdot \dots \cdot (x+y)}_n (x+y)$$

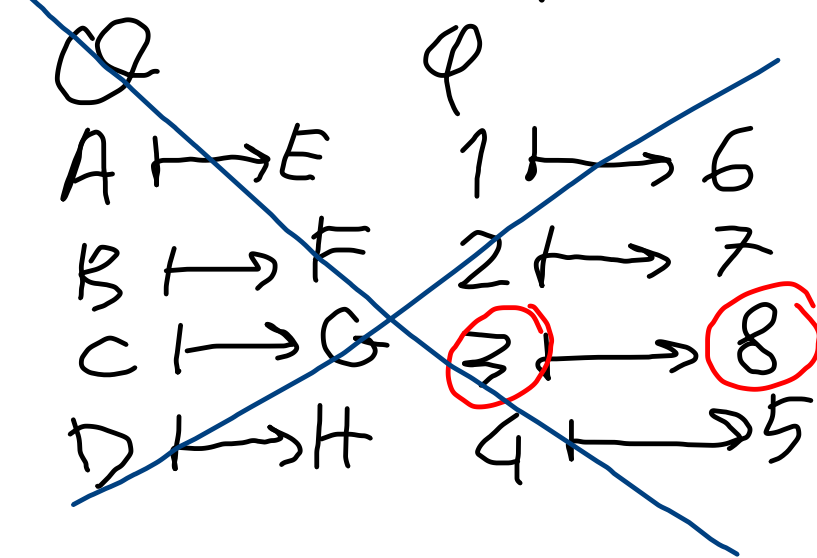
$G_1$



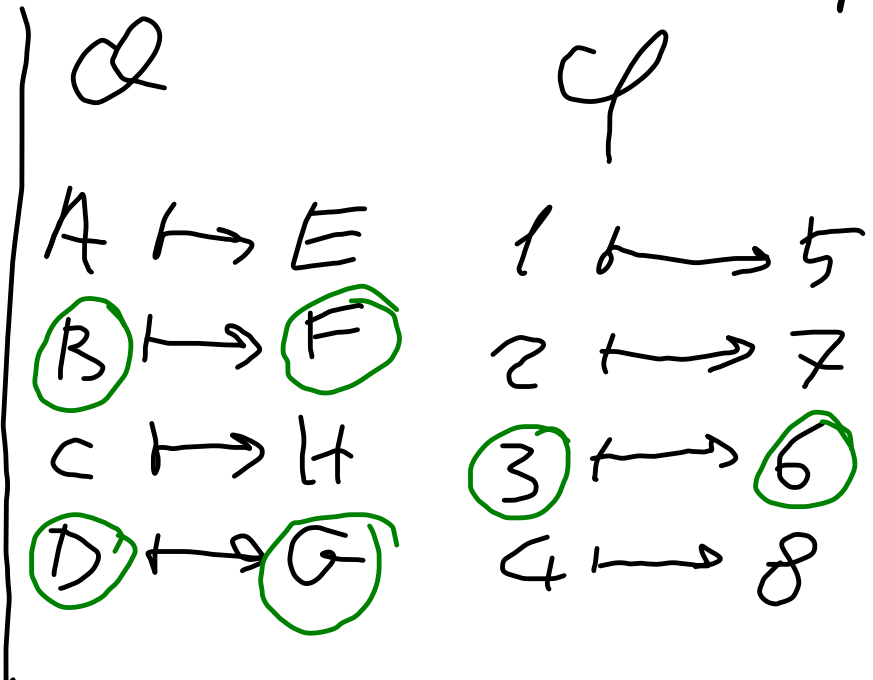
An isomorphism  
 $G_1 \rightarrow G_2$



~~NOT isomorphism~~



Another isomorph.



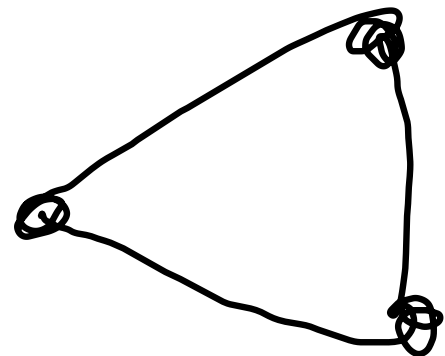
$K_1$



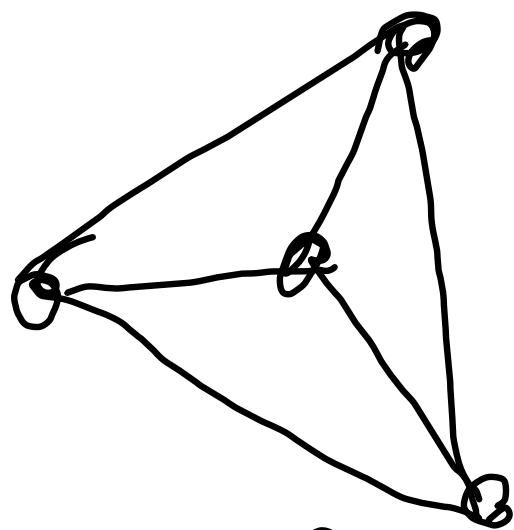
$K_2$



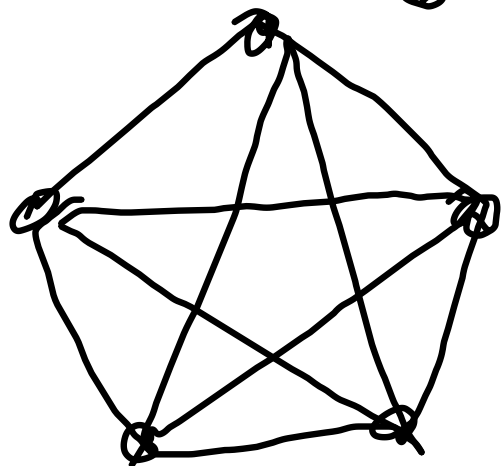
$K_3$



$K_4$



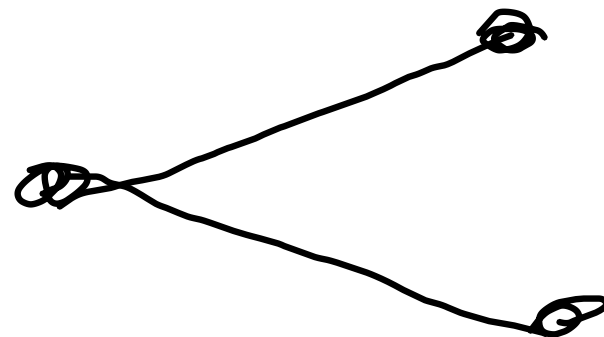
$K_5$



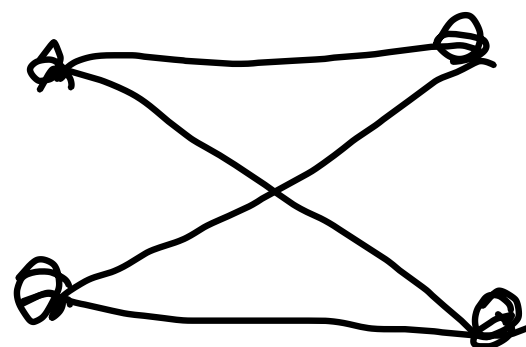
$K_{1,1}$

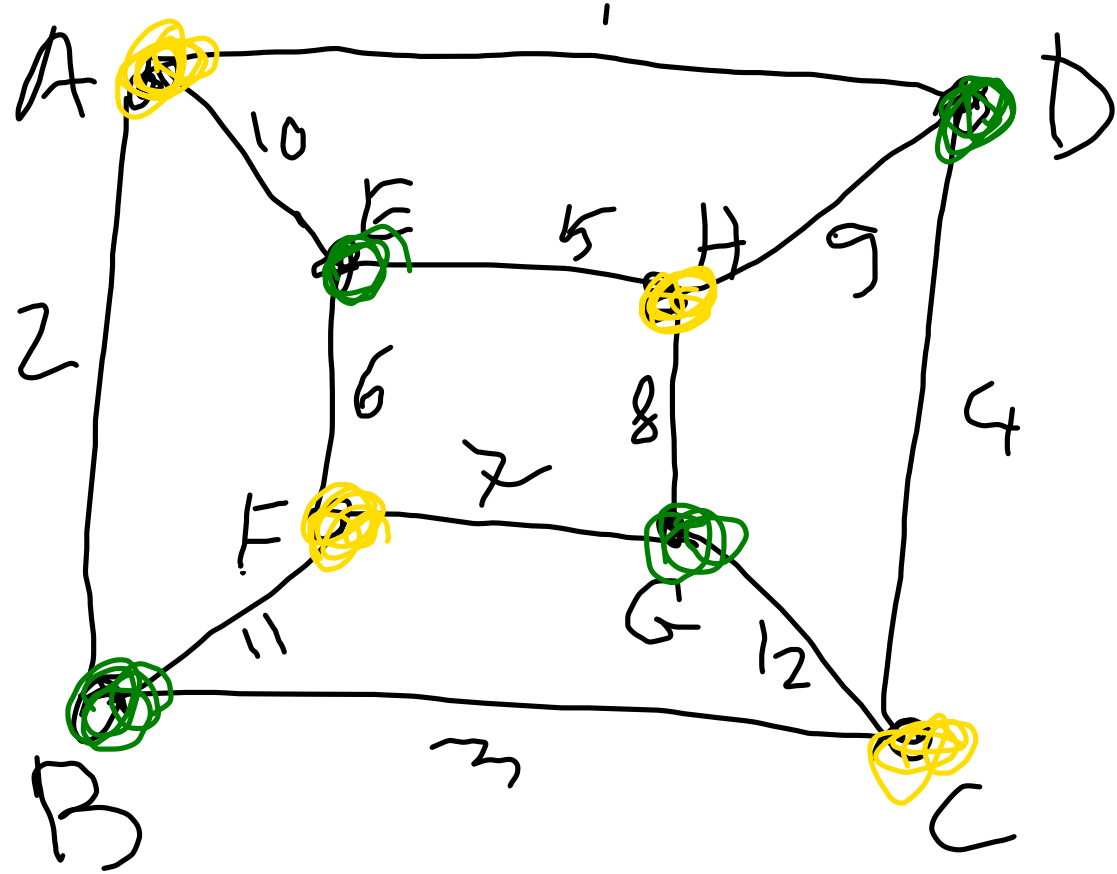


$K_{1,2}$



$K_{2,2}$



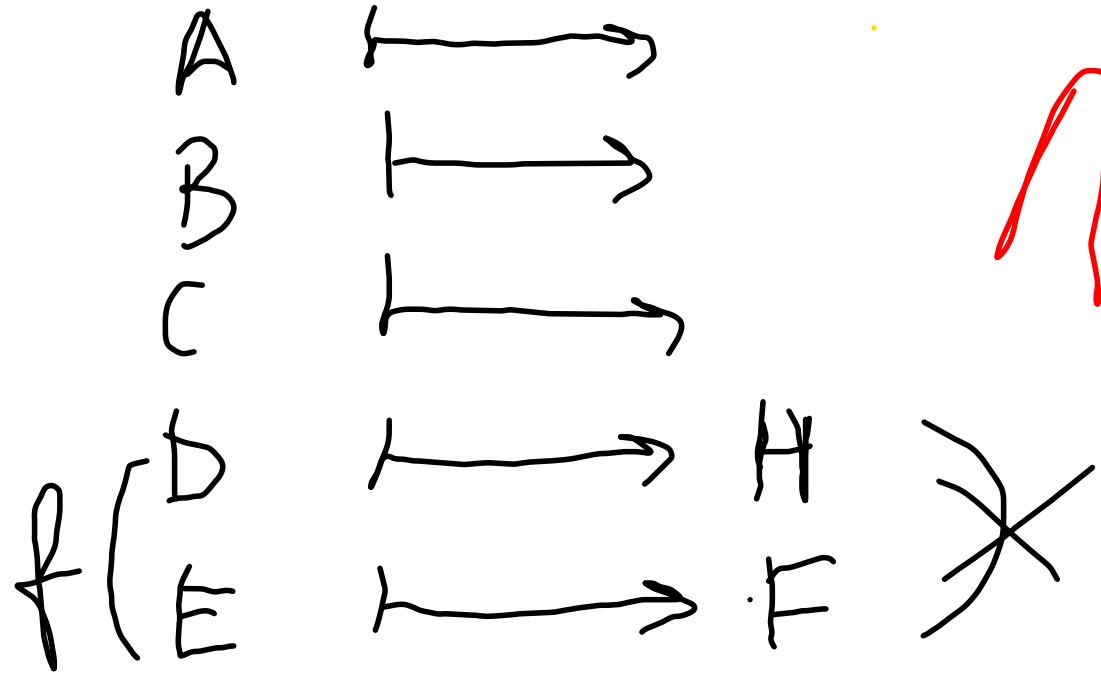


~~$$X = \{A, B, C, D\}$$

$$Y = \{E, F, G, H\}$$~~

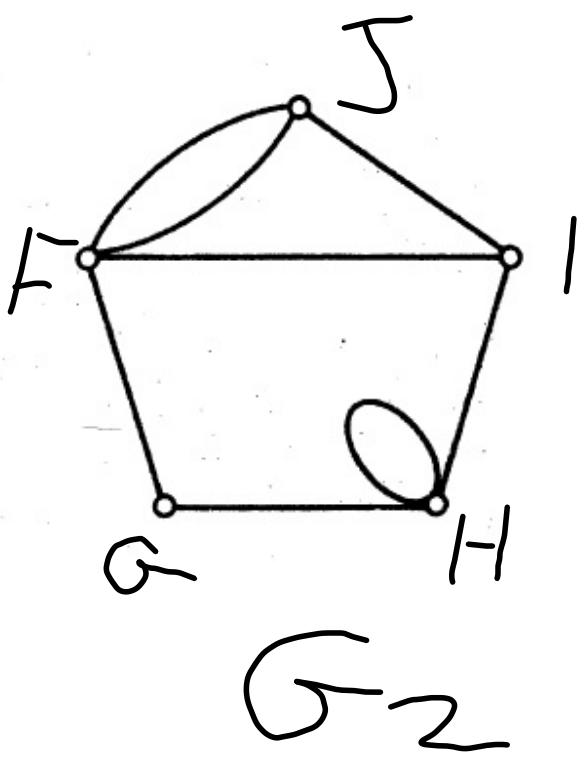
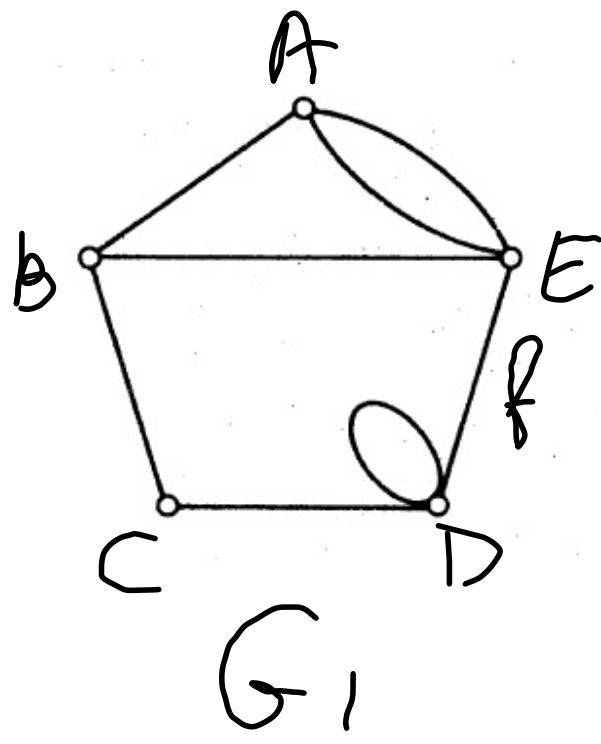
~~$$X = \{A, C, H, F\}$$~~

~~$$Y = \{B, D, E, G\}$$~~



NOT

ISOMORPHIC

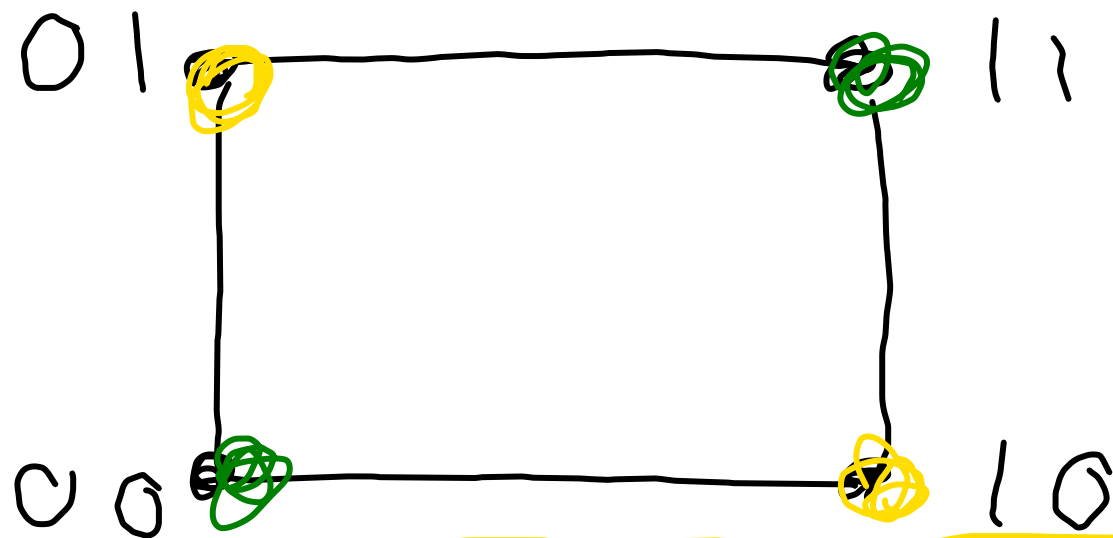


~~$4 \cdot 3 \cdot 2 = 24$~~

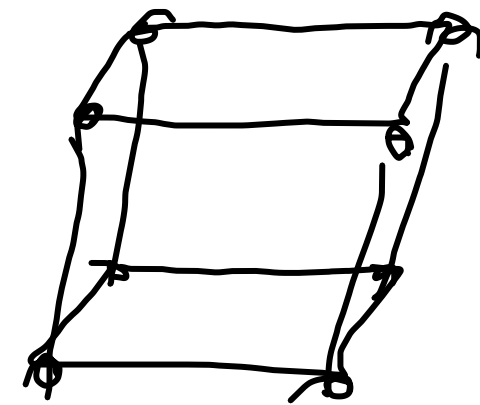
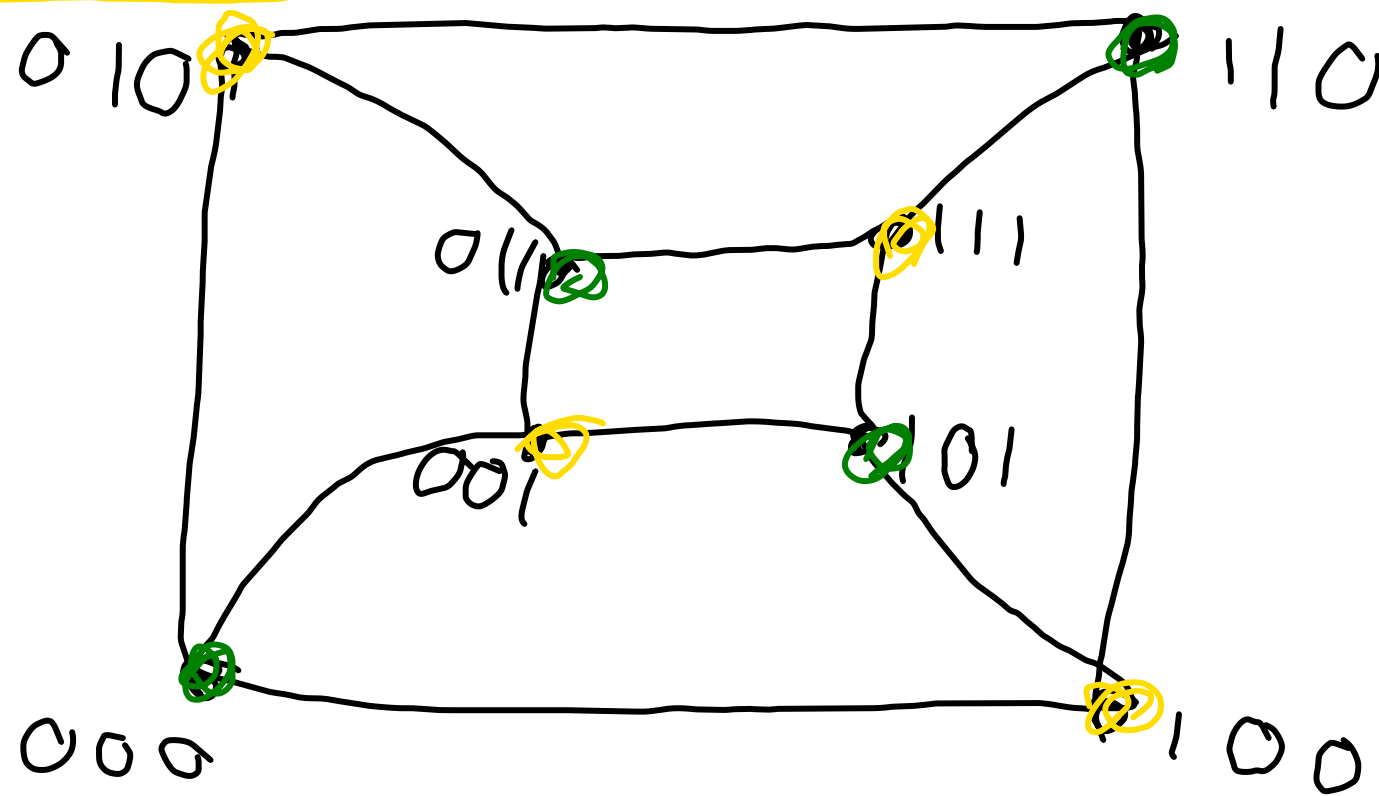
1-cube



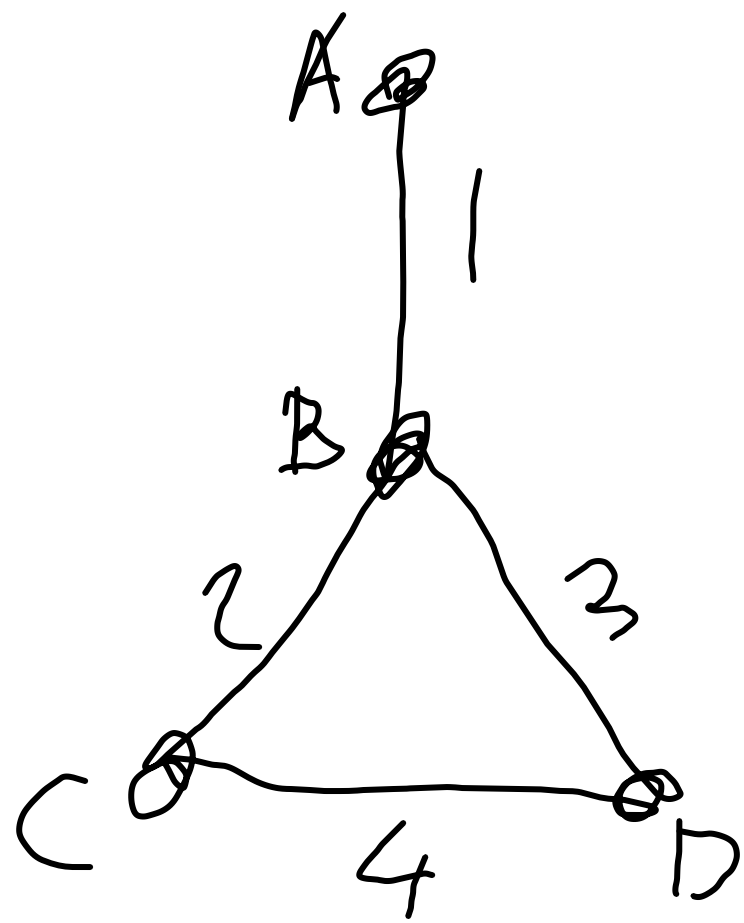
2-cube



3-cube







$A \mapsto A$        $1 \mapsto 1$   
 $B \mapsto B$        $2 \mapsto 2$   
 $C \mapsto C$        $3 \mapsto 3$   
 $D \mapsto D$        $4 \mapsto 4$

$A \mapsto A$   
 $B \mapsto B$   
 $C \mapsto D$   
 $D \mapsto C$

$1 \mapsto 1$   
 $2 \mapsto 3$   
 $3 \mapsto 2$   
 $4 \mapsto 4$

