1. Numero de aristas de k9,c11,W13, K19,C20, K8,10 , K,20,30

$K_9 = 9 \times 8 = 2e \quad 72 = 2e \quad e = 36$

$C_{11} = 11 \times 2 = 2e \quad e = 11$

$W_{13} = 13 \times 3 + 13 = 52 \quad = 2e \quad e = 26$

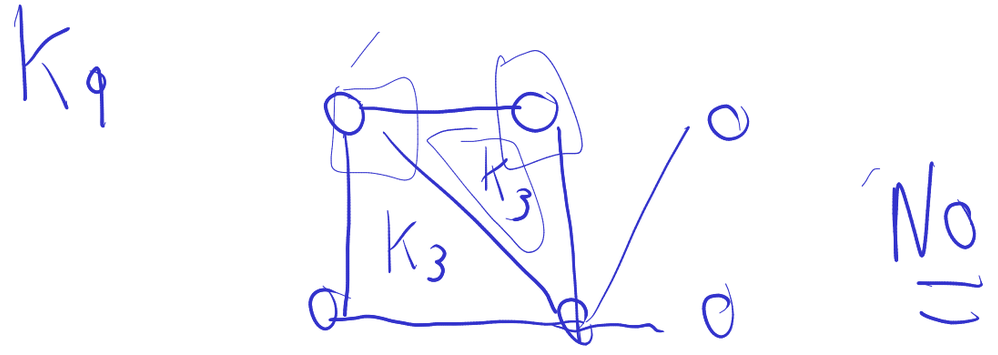
$K_{19} = 19 \times 18 = 2e \quad e = 171$

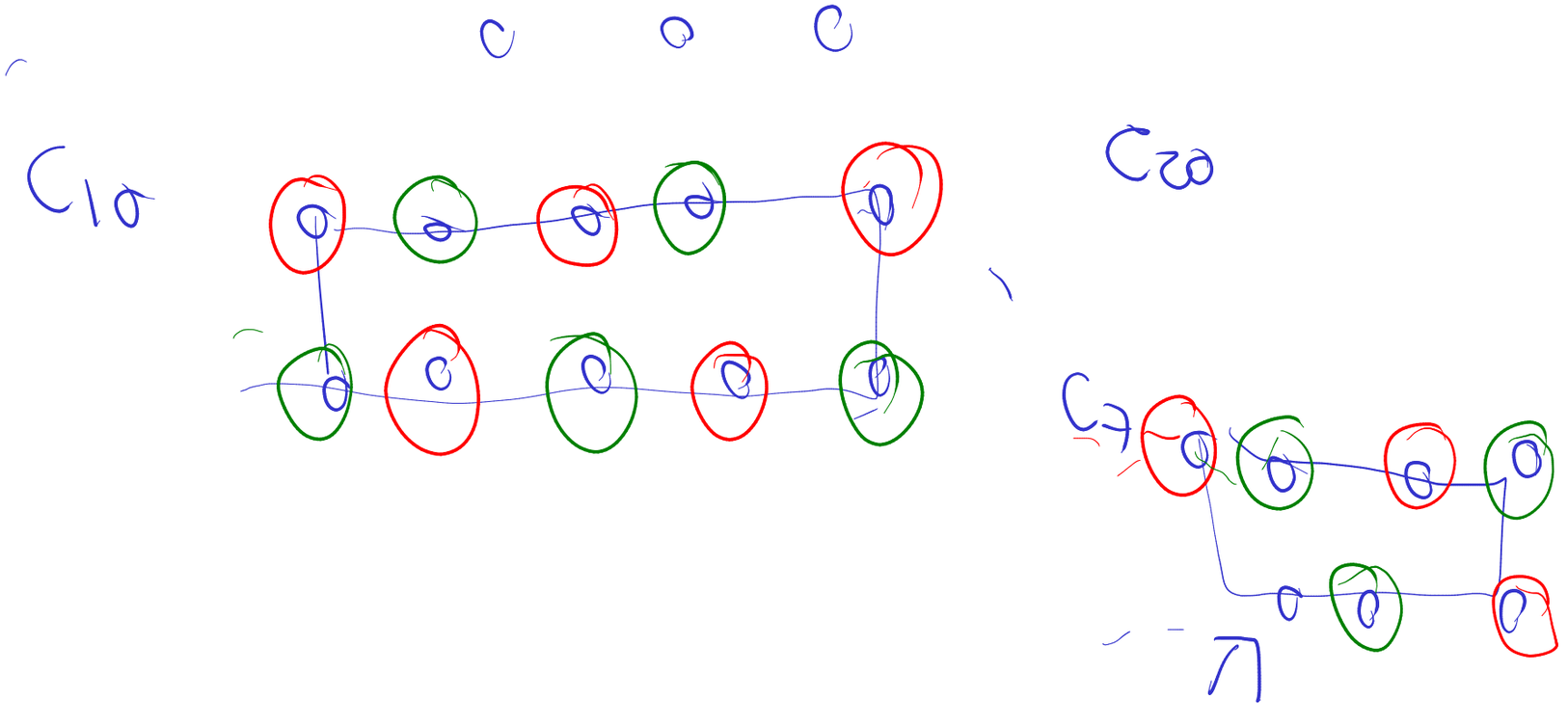
$C_{20} = 2 \times 20 = 2e \quad e = 20$

$K_{8,10} = 8 \times 10 + 10 \times 8 = \boxed{e = 80}$

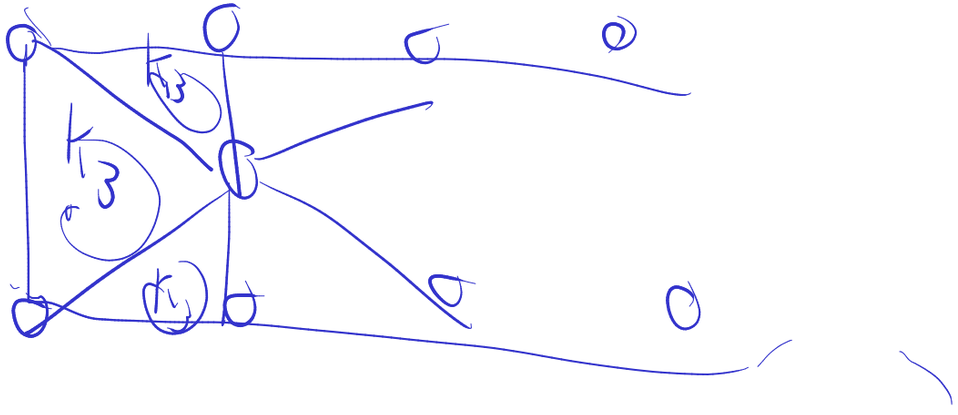
$K_{20,30} = 20 \times 30 + 30 \times 20 \quad \boxed{e = 600}$

¿Son bipartitos? K9,C10, C20,W30, K8,9 , K8,10

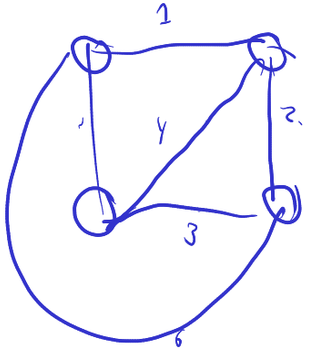




W_{30}



Dibujar los subgrafos K4,C3,W3, K2,3 , K3,1



1) $C(6,1) = 6$

2) $C(6,2) = 15$

3) $C(6,3) = 20$

4) $C(6,4) = 15$

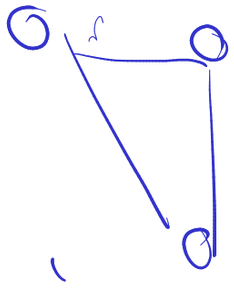
5) $C(6,5) = 6$

3) $C(6,6) = 1$

$C(6,0) = 1$

$\frac{6!}{2!\,4!}$

$\frac{6!}{3!\,3!}$



$C(4,1) = 4$

$C(3,0) = 1$

$C(3,1) = 3$

$C(3,2) = 3$

$C(3,3) = 1$

$C(4,2) = 6$

$C(1,1) = 1$

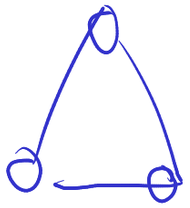
$C(1,0) = 1$

$C(4,3) = 4$

$C(4,4) = 1$

0

K3)



$C(3,0) = 1$

$C(3,1) = 3$

$C(3,2) = 3$

$C(3,3) = 1$

8

$C(3,1) = 3$

$C(1,0) = 1$

$C(1,1) = 1$

2

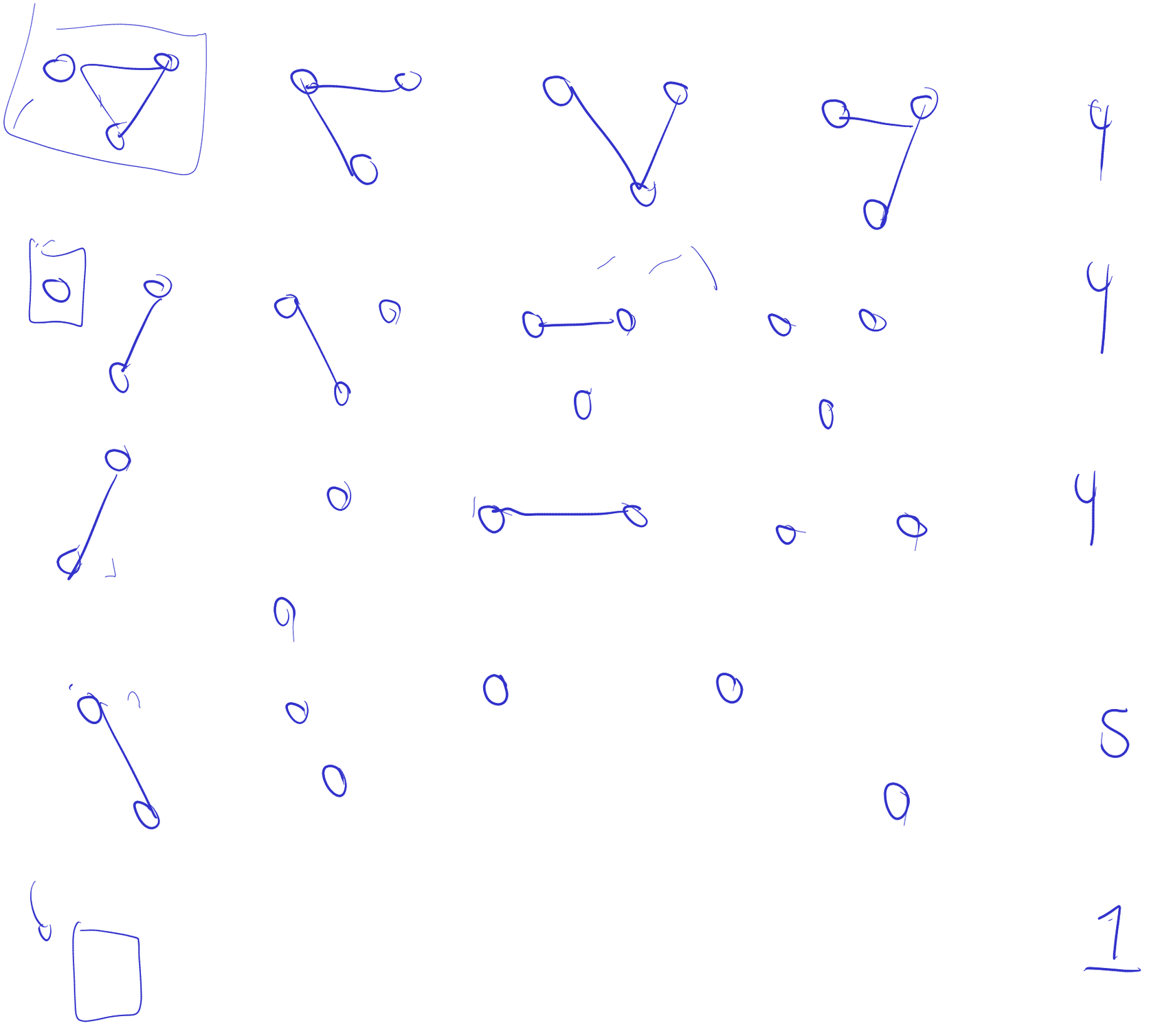
6

$C(3,2) = 3$

0 3

$C(3,3) = 1$

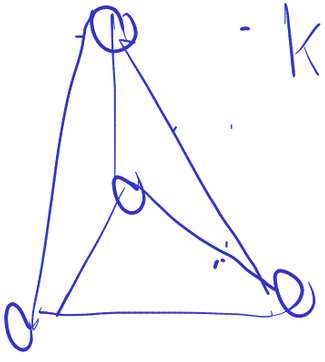
18


4
4
4
5
1

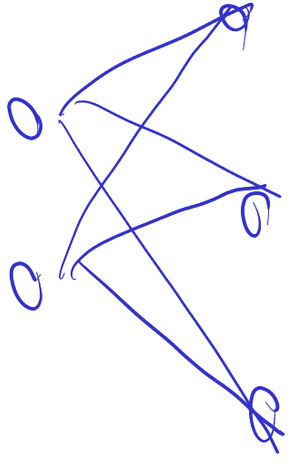
C_3

18

W_3



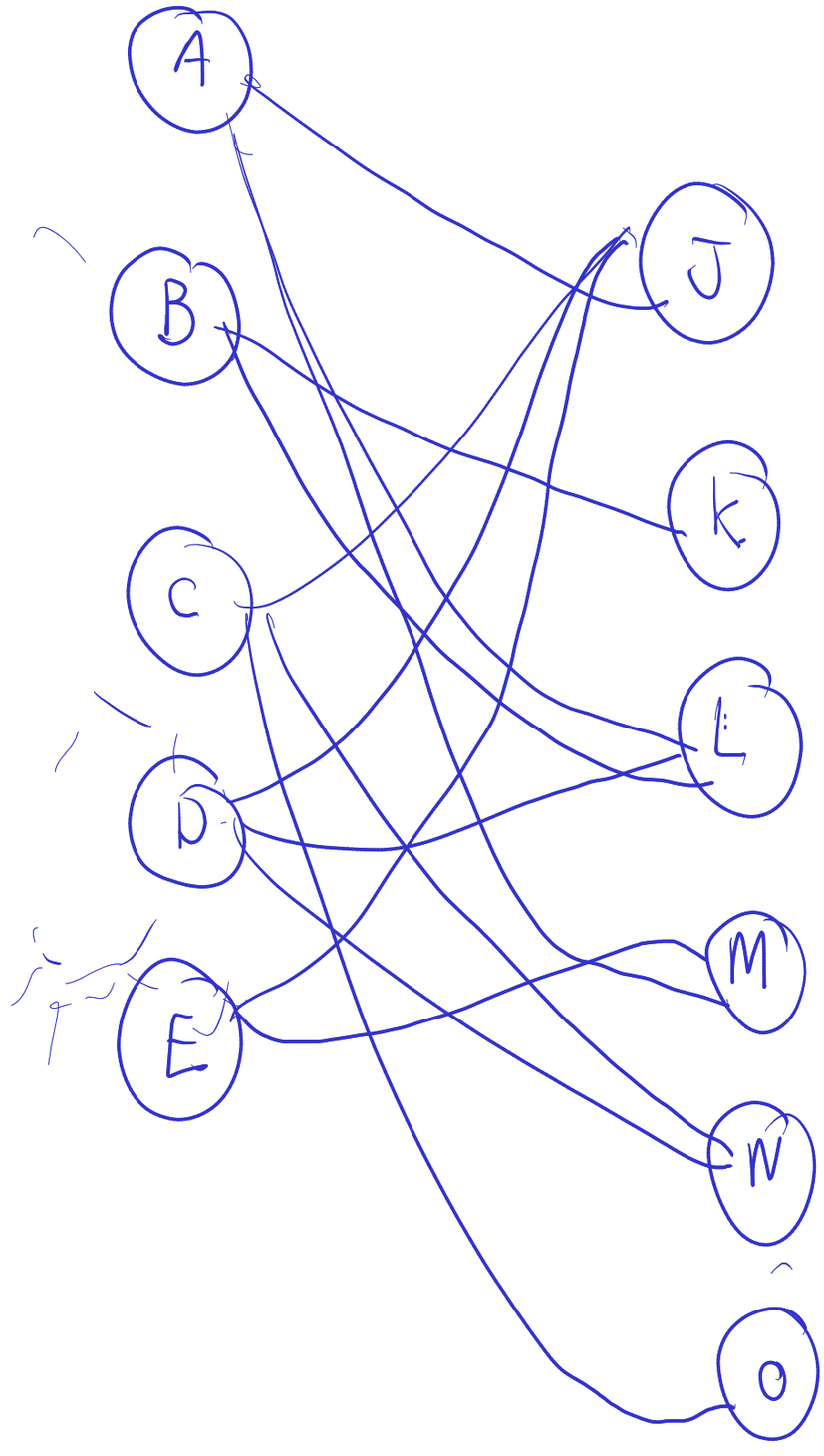
K_4

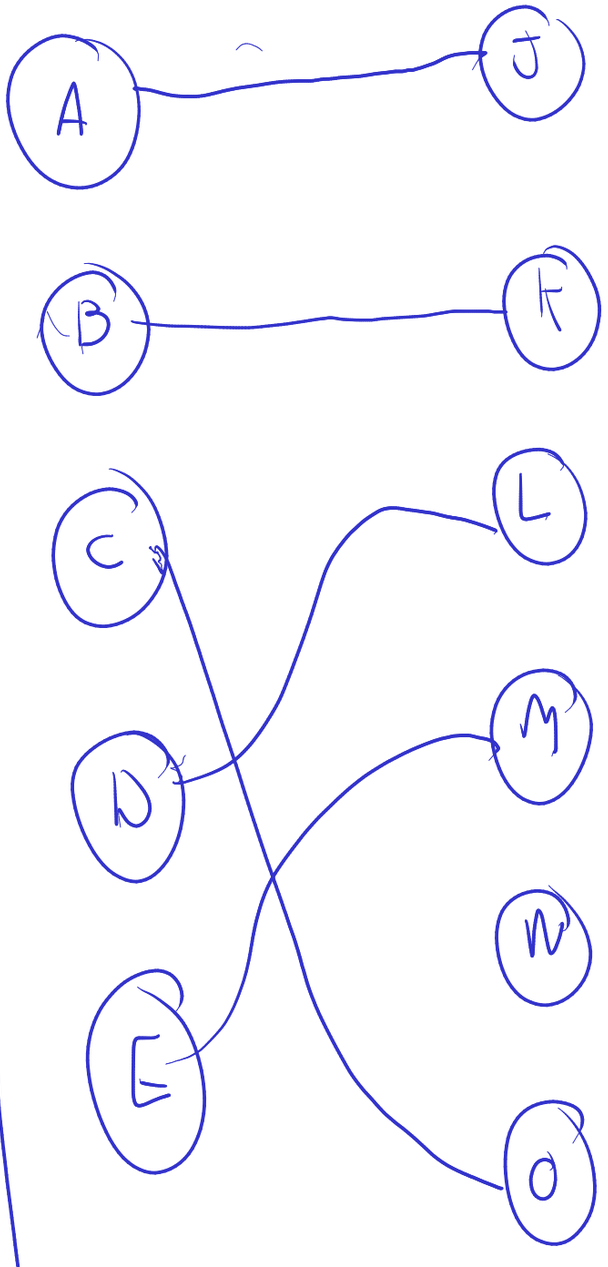


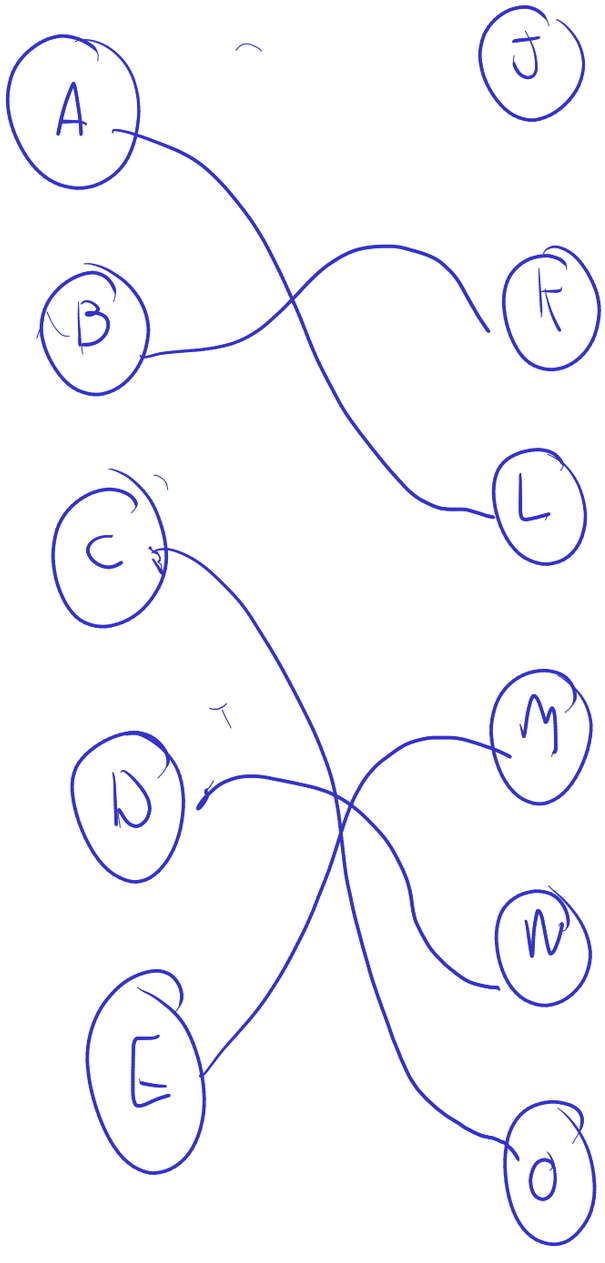
30. Suppose that there are five young women and six young men on an island. Each woman is willing to marry some of the men on the island and each man is willing to marry any woman who is willing to marry him. Suppose that Anna is willing to marry Jason, Larry, and Matt; Barbara is willing to marry Kevin and Larry; Carol is willing to marry Jason, Nick, and Oscar; Diane is willing to marry Jason, Larry, Nick, and Oscar; and Elizabeth is willing to marry Jason and Matt.

a) Model the possible marriages on the island using a bipartite graph.

b) Find a matching of the young women and the young men on the island such that each young woman is matched with a young man whom she is willing to marry.


A
B
C
D
E
J
K
L
M
N
O

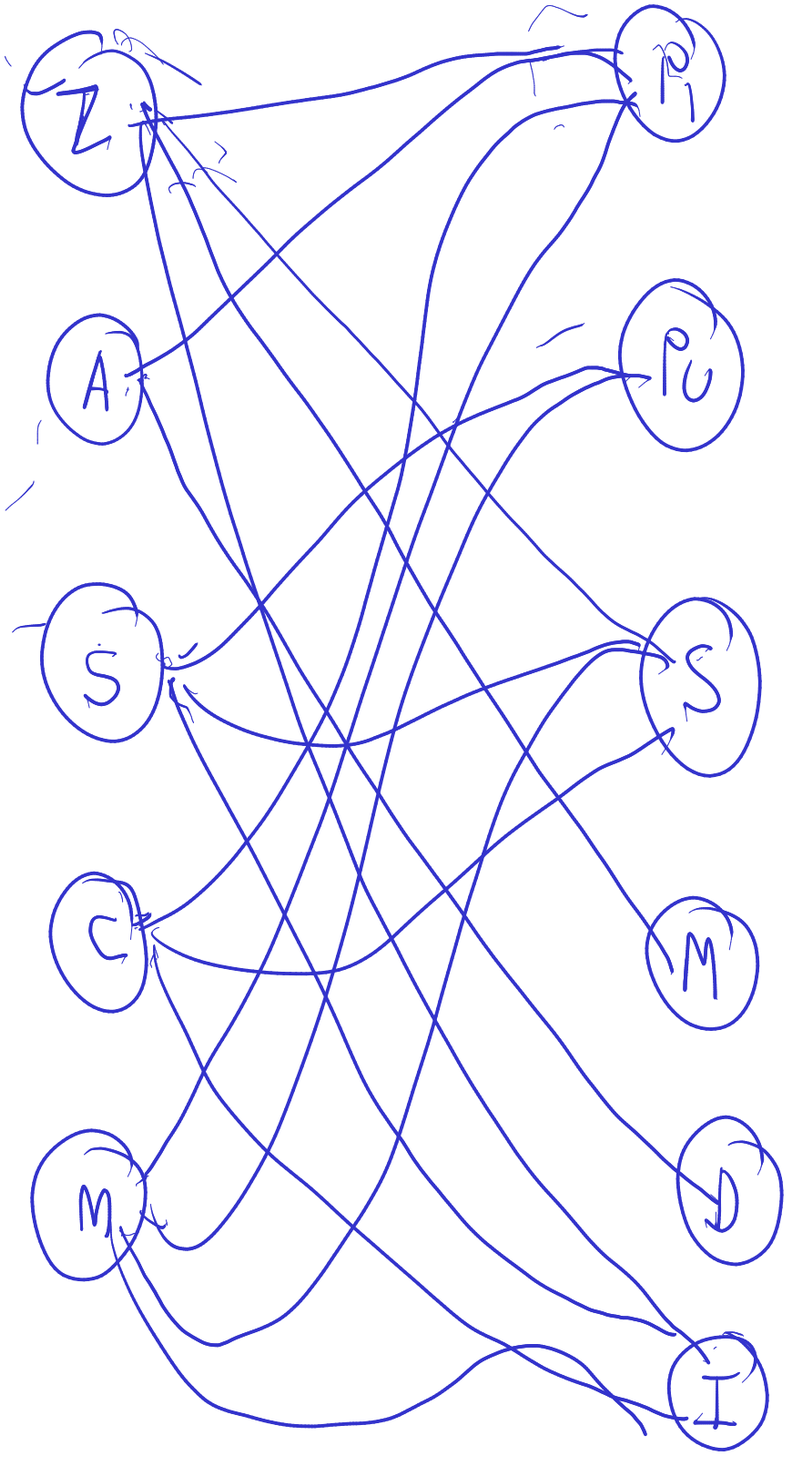

A
B
C
D
E
J
F
L
M
N
O

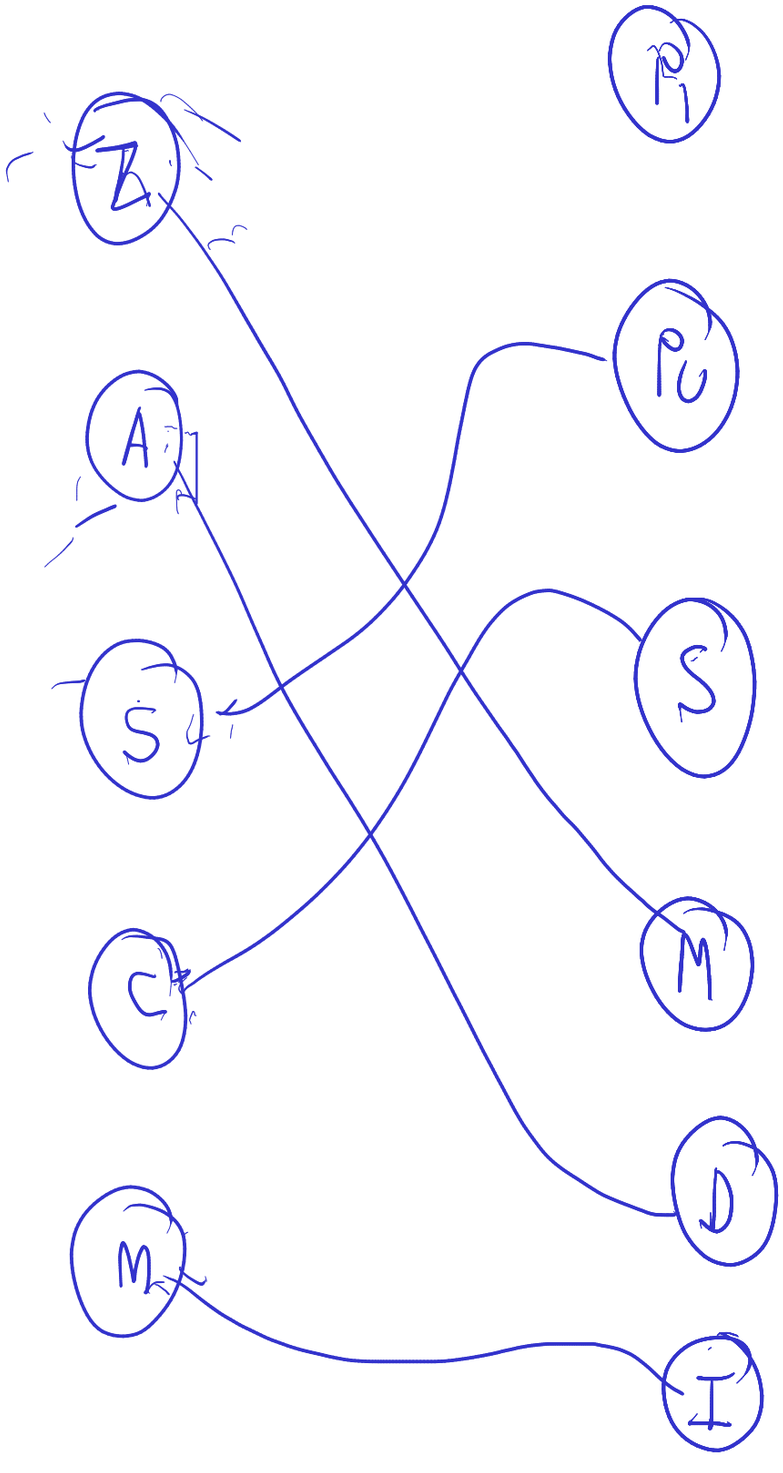

A
J
B
F
L
C
M
D
N
E
O

Suppose that a new company has five employees: Zamora, Agraharam, Smith, Chou, and Macintyre. Each employee will assume one of six responsiblities: planning, publicity, sales, marketing, development, and industry relations. Each employee is capable of doing one or more of these jobs: Zamora could do planning, sales, marketing, or industry relations; Agraharam could do planning or development; Smith could do publicity, sales, or industry relations; Chou could do planning, sales, or industry relations; and Macintyre could do planning, publicity, sales, or industry relations.

a) Model the capabilities of these employees using a bipartite graph.

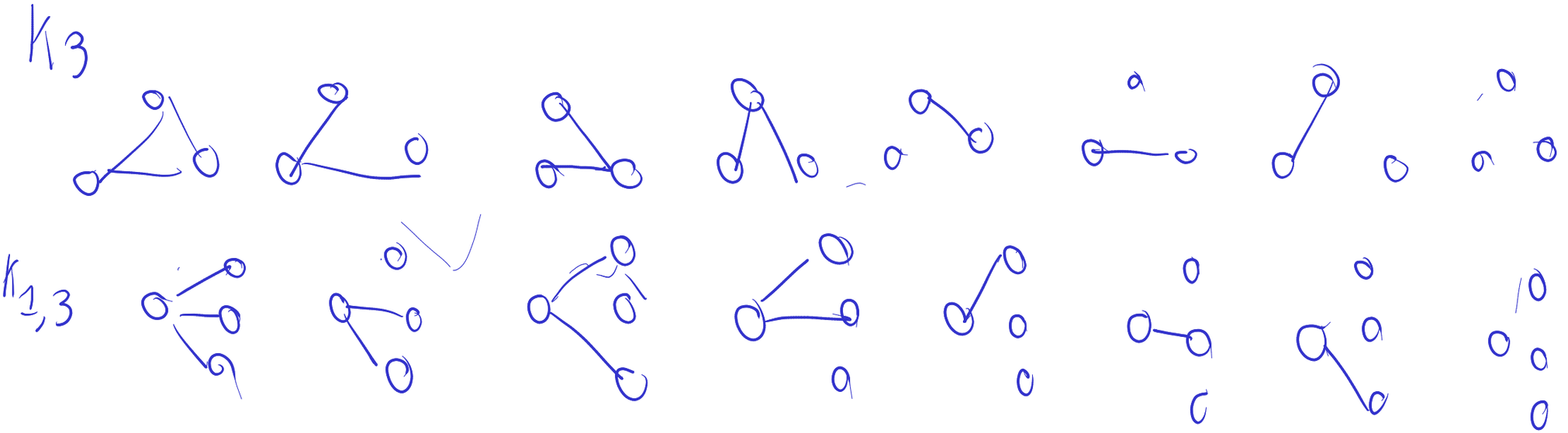
b) Find an assignment of responsibilites such that each employee is assigned one responsibility.


Z
A
S
C
M
P
P
S
M
D
I

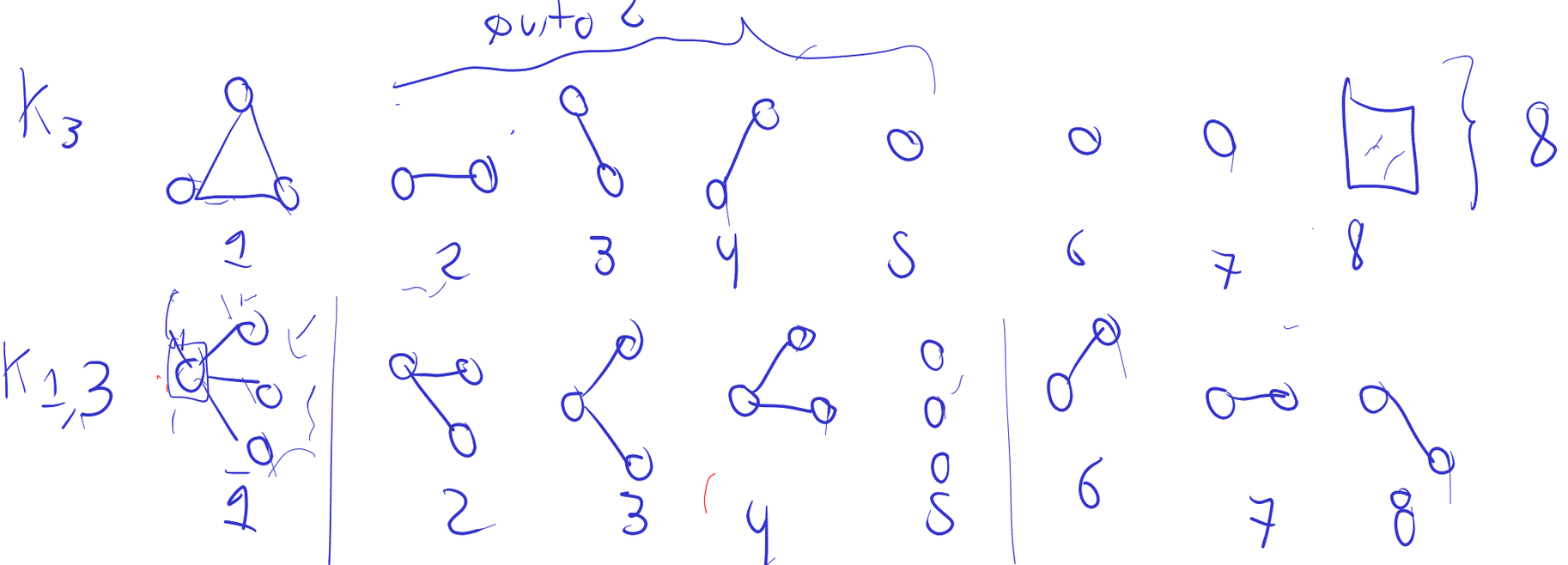

B
A
S
C
M
P
P
S
M
D
I

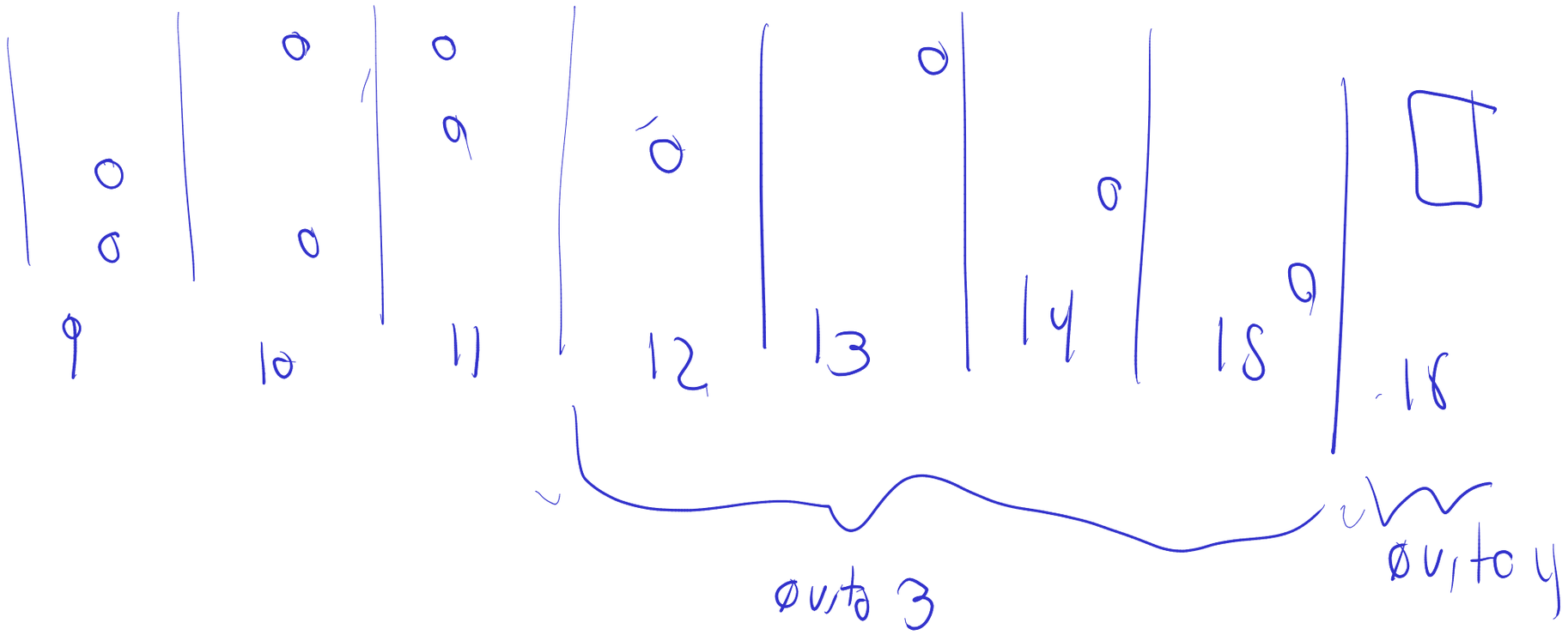
Dado K3, K1,3

- Dibujar todos los subgrafos que son recubridores



- Dibujar todos los subgrafos inducidos




9
10
11
12
13
14
15
16
out 3
out to y