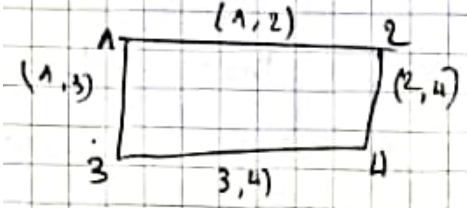
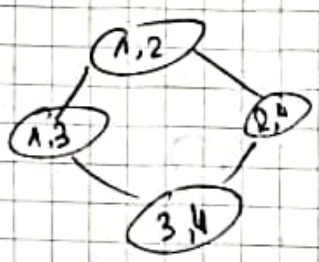
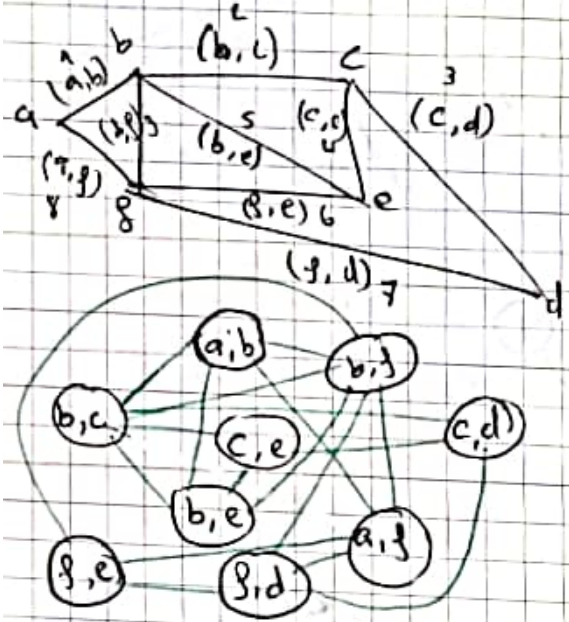
Tutorial Sheet N°3

Ex 1 :

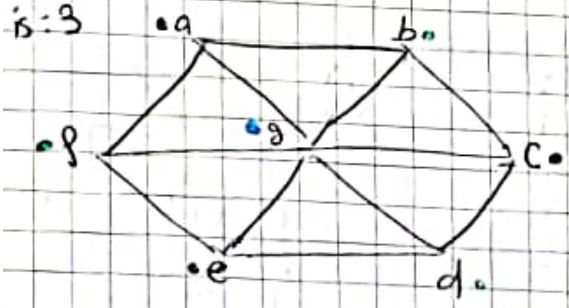
1) the adjoint graphs







3) the chromatic number of the graph is : 3



Ex 2 :

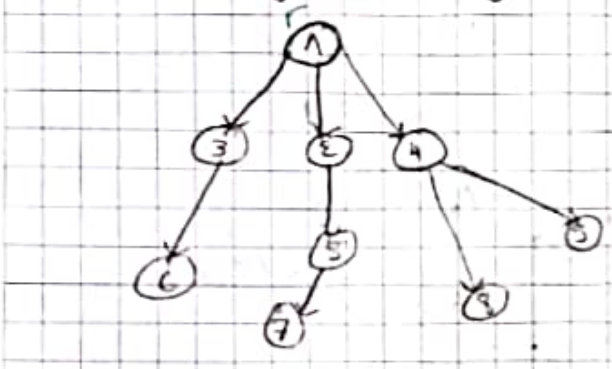
isthmuses are : (1 - 4), (3 - 5), (1 - 3), (7 - 8), (7 - 9), (3 - 2)

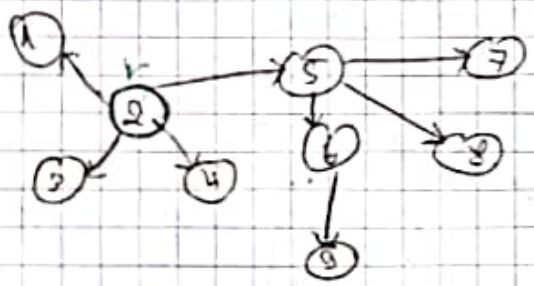
Ex 3:

	graph 1	graphe
number of edges	8	8
number of isthmuses	8	8
the type of these graphs	tree	tree

we notice that in trees :

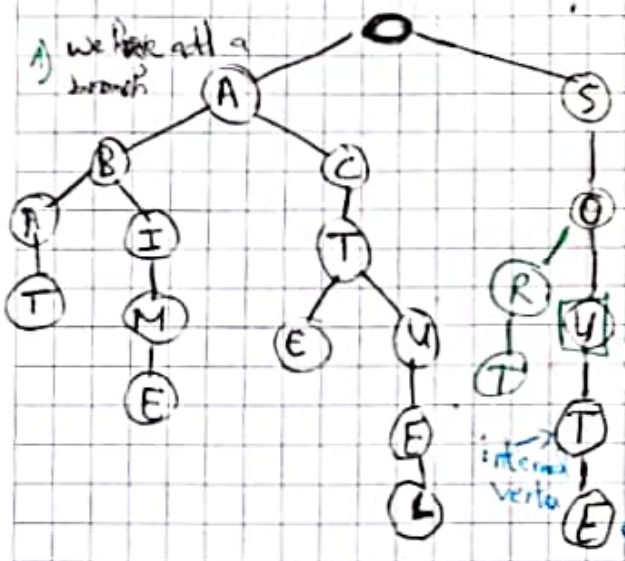
number of edges = number of isthmuses





Ex 4 :

A) we have all a branch

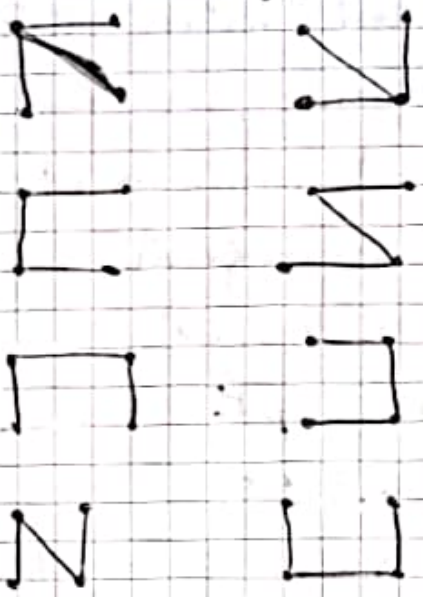


B) we color the last letter of the word alphabete

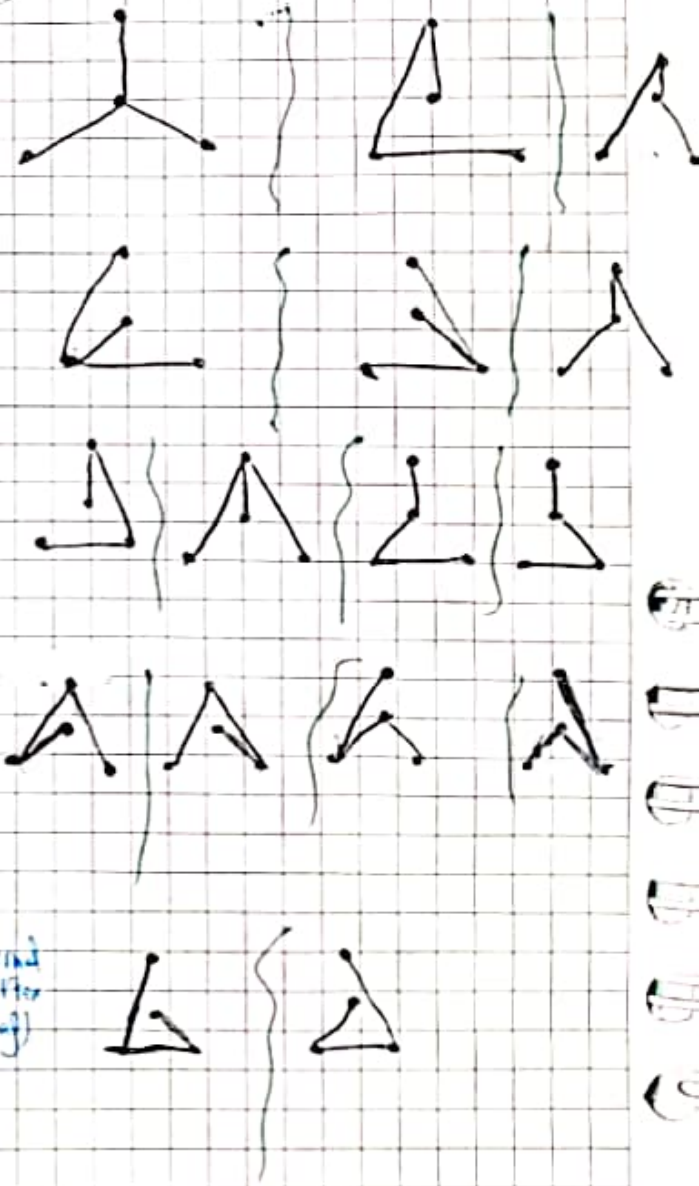
Ex 5 :

the number of spanning trees

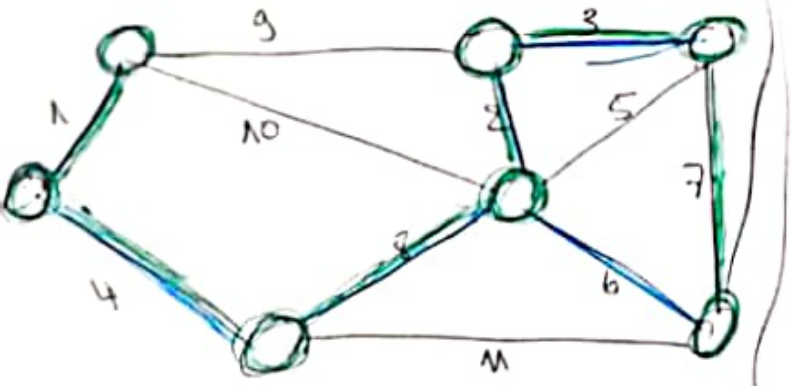
(2)



(3)



Ex 6 (S3)



Kruscal

5 ✓
6 ✓
7 ✓
9 ✗
12 ✓
13 ✓
14 ✗
18 ✓
19 ✗
28 ✗
30 ✓
34 ✗
35 ✗
36 ✗

5+6+7 +12+13 +18+30 = 91

Prim

5 ✓
6 ✓
7 ✓
9 ✗
12 ✓
13 ✓
14 ✗
18 ✓
19 ✗
28 ✗
30 ✓
34 ✗
35 ✗
36 ✗

5+6+7 +12+13 +18+30 = 91

Kruscal

1 ✓
2 ✓
3 ✓
4 ✓
5 ✗
6 ✓
7 ✗
8 ✓
9 ✗
10 ✗
11 ✗

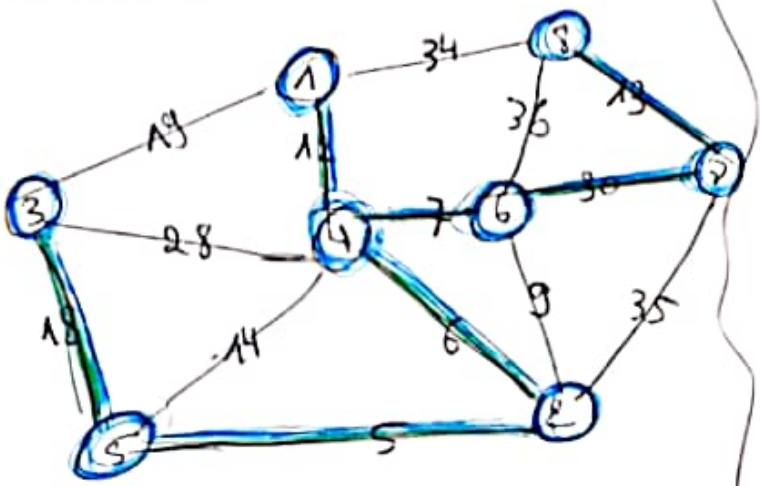
1+2+3+4+6+8 = 24

Prim

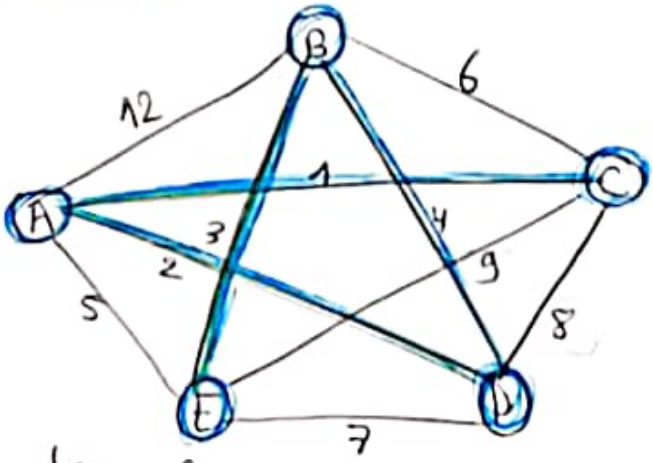
1 ✓
2 ✓
3 ✓
4 ✓
5 ✗
6 ✗
7 ✓
8 ✓
9 ✗
10 ✗
11 ✗

1+2+3+4+7+8 = 25

Ex 7 (S3) :



Ex 8 (S3) :



Kruscal

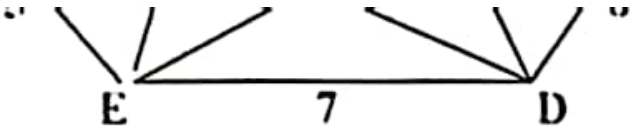
1 ✓
2 ✓
3 ✓
4 ✓
5 ✗
6 ✗
7 ✗
8 ✗
9 ✗
12 ✗

1+2+3 +4 = 10

Prim

1 ✓
2 ✓
3 ✓
4 ✓
5 ✗
6 ✗
7 ✗
8 ✗
9 ✗
12 ✗

10



2. Find a minimum spanning tree by applying Kruskal's algorithm on the graph belo

1 ✓
1 ✓
1 ✓
2 ✓
2 ✓
2 ✓
2 ✗
2 ✗
2 ✗
3 ✗
3 ✗
5 ✗

1×3+2×3=9