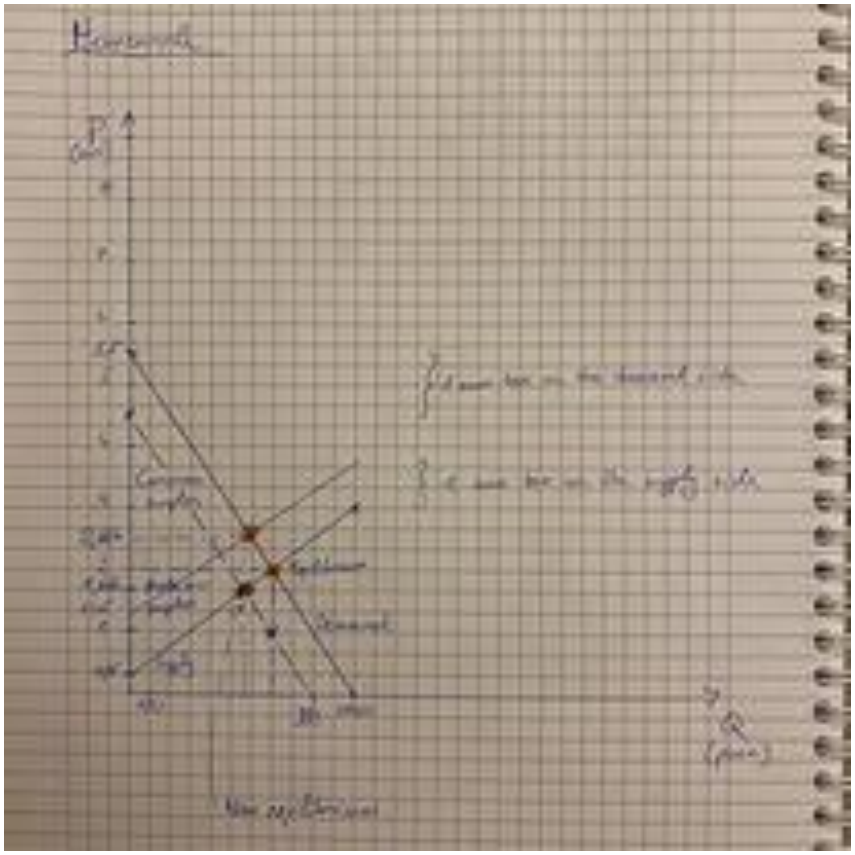
Individual assignment 1

1,
Qd=1100-200p
0=1100-200p
200p=1100
p=5.5



Qs=400p-100
0=400p-100
100=400p
p=0.25

Qs=400(3)-100
Qs=1200-100=1100

Equilibrium price and quantity:
400p-100=1100-200p
Pe=2

Qe=1100-200(2)=700

Consumer surplus=1/2x3.5x700=1225
Producer surplus=1/2x1.75x700=612.5

2.Taxing the demand side by 1 euro

The price at 0 will be 5.5-1=4.5 euro. So Qd will be 200x4.5=900
The new equilibrium price will be 900-200p=400p-100 Pe=1.666euro.
The new equilibrium quantity will be 900-200(1.666)=566.8
New consumer surplus=1/2x(4.5-1.666)x566.8=803.1556
New producer surplus=1/2x(1.666-0.25)x566.8=401.2944
Deadweight loss=1/2x1x(700-566.8)=66.6

3. Taxing the supply side by 1 euro

New Qs= 400p-500
New equilibrium price will be 400p-500=1100-200p Pe=2.666euro.
New equilibrium quantity will be 1100-200(2.666)=566.8
New consumer surplus will be 1/2x(5.5-2.666)x566.8=803.1556

New producer surplus=1/2x(1.666-0.25)x566.8=401.2944
Deadweight loss=1/2x1x(700-566.8)=66.6

Comment: After doing all these calculations I can conclude that if we tax the demand side or the supply side by the same amount, we will game the same results for: equilibrium quantity, consumer surplus, producer surplus and deadweight loss. The only thing that will be different is the price equilibrium and it will differ by the same amount as the tax in this particular case it is 1 euro.