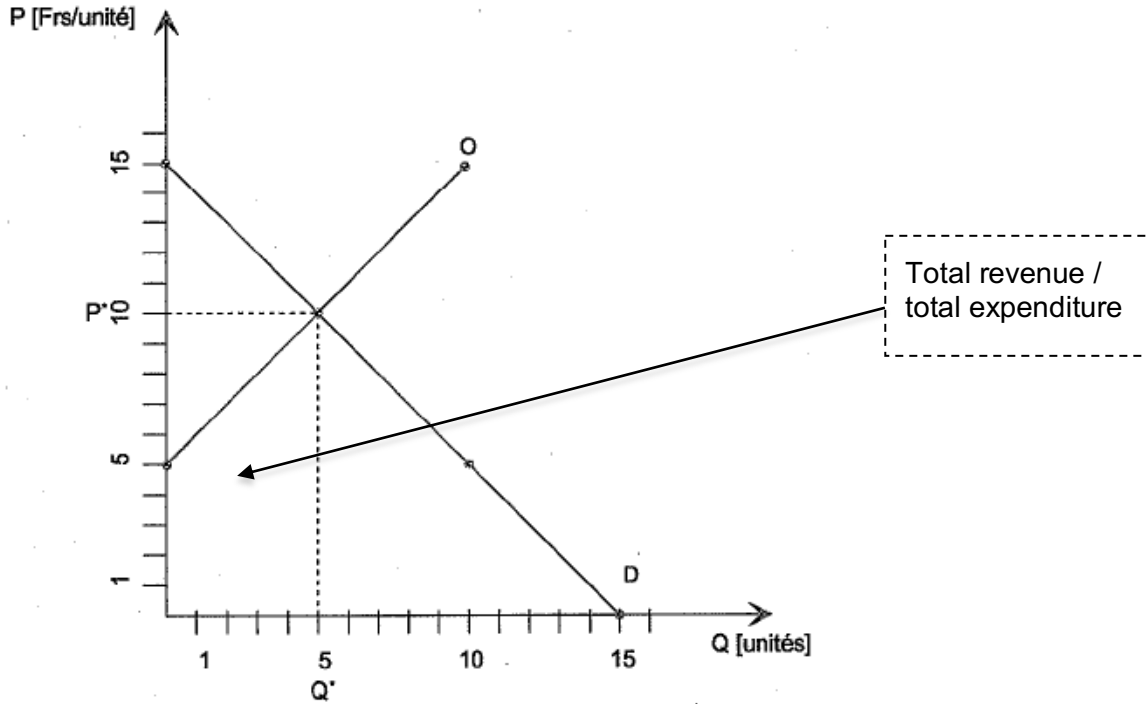


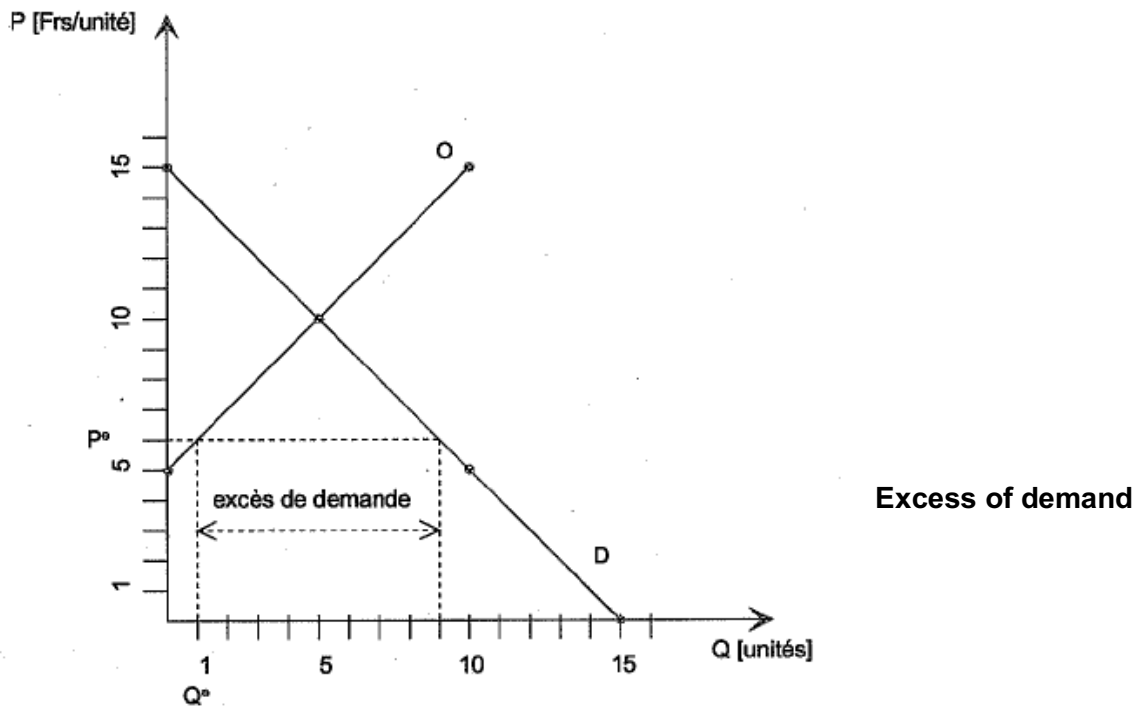
Problem Set 1 (solution)

Exercise 1

i) Supply = Demand => $P = 10$, and $Q = 5$



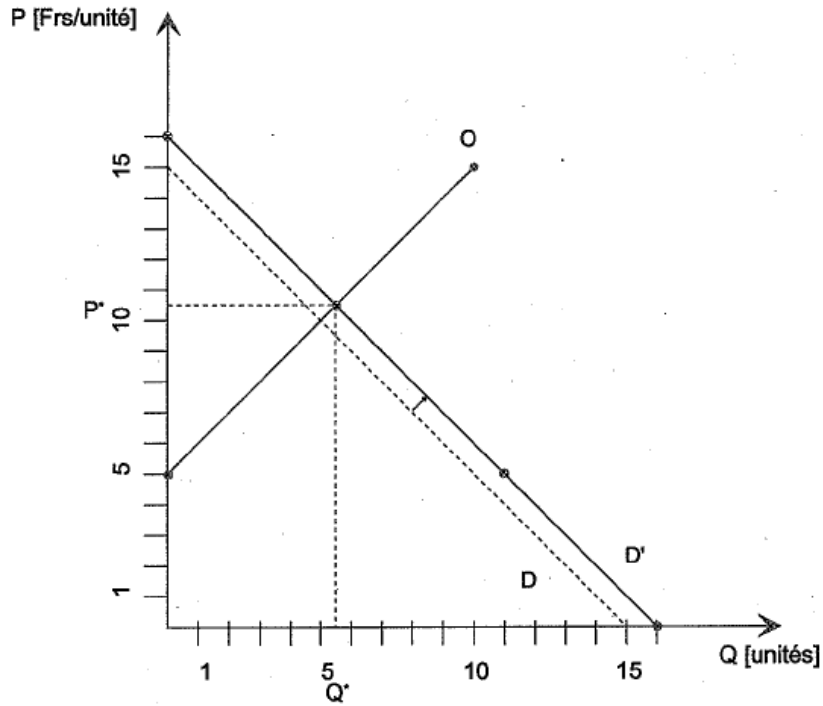
ii) If there is an **excess of demand**, the price and the quantities will increase until the equilibrium where the exchanged quantities are maximized.



iii) The new equilibrium is for:

$$P = 10,5$$

$$Q = 5,5$$

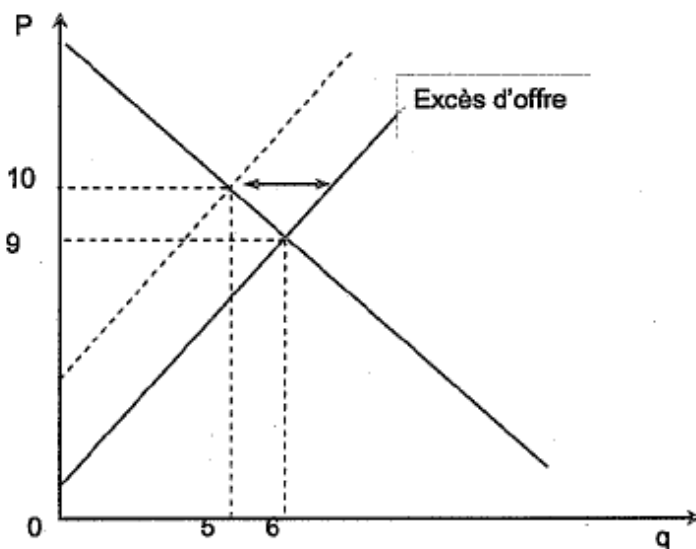


Other examples: market expectations; increase in income; price increase of electricity (substitute); ...

iv) The new equilibrium is for:

$$P = 9$$

$$Q = 6$$



Excess of supply

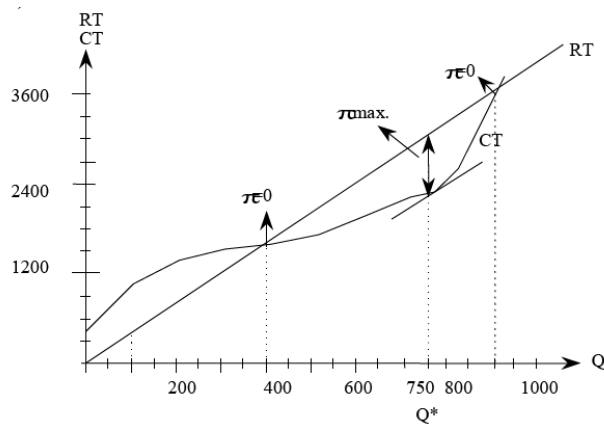
Exercise 2

(i)

Quantity	<i>TC</i>	<i>TR</i>	Profit	<i>MC</i>	<i>MR = P</i>
0	400	0	- 400		
100	1000	400	- 600	6	4
200	1300	800	- 500	3	4
300	1500	1200	- 300	2	4
400	1600	1600	0	1	4
500	1700	2000	300	1	4
600	1850	2400	550	1.5	4
700	2200	2800	600	3.5	4
750	2400	3000	600	4	4
800	2650	3200	550	5	4
900	3600	3600	0	9.5	4

- 1) The profit is maximized for a production of 750 boxes ($MR = MC$).
- 2) When producing 400 or 900 boxes, the factory does not make any profit or loss.

(ii)



(iii)

The equilibrium is the point where the factory maximizes its profit, i.e., 750 boxes.

This is the point where the distance between *TC* and *TR* is the largest. This point is also where the two curves have the same slope ($MC = MR$).

(iv)

If the price of the boxes increases, TR rotates and the slope increases (MR increases). Q^* and the total profit also increase at the equilibrium.

In marginal values, MR increases, thus moves up to form a new equilibrium with MC more on the right, which will increase the quantity produced.

(v)

If the fixed costs decreased, UTC and TC will decrease. As the marginal values are not influenced, the quantity produced will not change but the total profit at the equilibrium will increase.