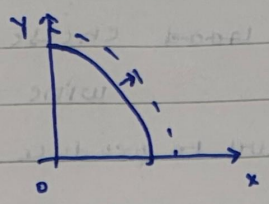
Problem Set (Jan, 12)

1. (c) Technological innovation



2. Economic cost = price + rent
= 40 + 50 = 90

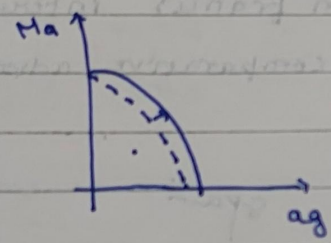
Economic rent = Value − Economic cost
= 100 − 90 = 10. (option c)

} This is the amount which you would be willing at maximum in addition to the price.

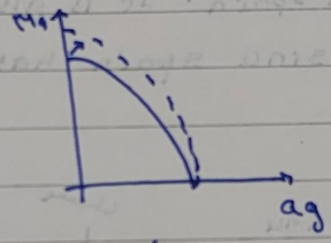
3. own your own

4. d. (moving from E to H is possible without reducing bacon).

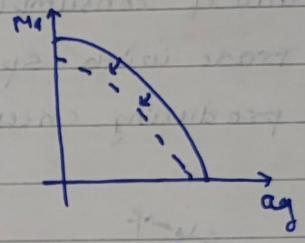
5.



(a)



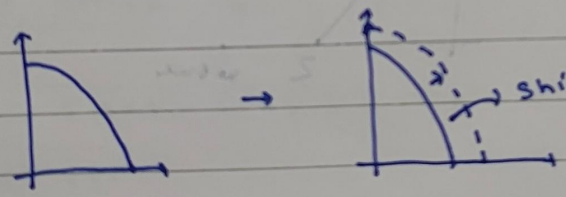
(b)



(c)

6. a. Plot all the coordinates from the table.

b.



c. $\frac{165-145}{5-4} = |-20| = \frac{20}{\downarrow}$
opportunity cost.

e. Straigh line → PPF with constant opportunity cost.

Jan, 21, 2025. (Q 3 is similar to Q 2; do it own your own)

2. a) Absolute advantage : ~~Wood~~ Cheese : France

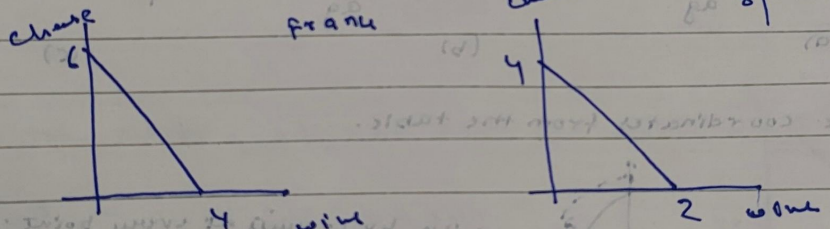
Wine : France

→ France takes fewer hours to produce both cheese and wine.

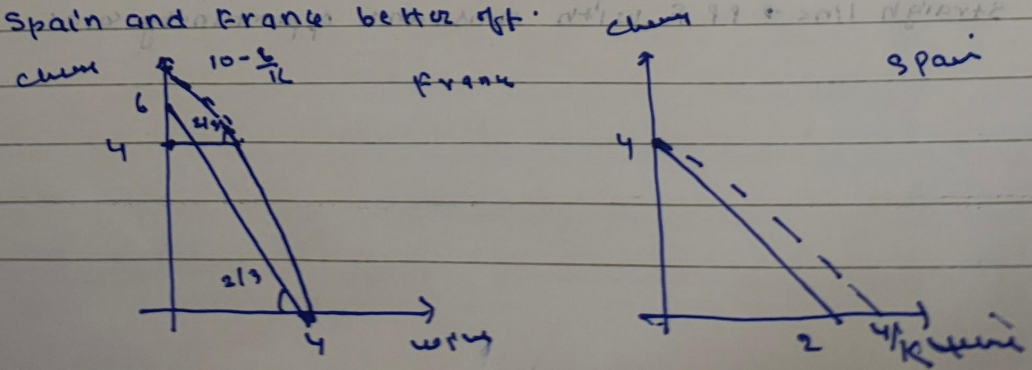
Spain has a comparative advantage in cheese, with 1 Kilo of cheese costs 6/12 = 0.5 a bottle of wine, in France 1 Kilo of cheese costs while 4/6 = 0.66 a bottle of wine. Therefore, France has a comparative advantage in wine; in France a bottle of wine costs 6/4 = 1.5 Kg of cheese, while in Spain 12/6 = 2 Kg of cheese.

b. Yes, because specialization will increase the values of production and of consumption in Spain. It is also in France's interest to trade with Spain, since Spain has a comparative advantage in producing cheese.

3.



4. under autarky (no trade) France can exchange one bottle of wine for 3/2 Kilo of cheese. Spain can exchange one bottle of wine for 2 Kilo of cheese. Therefore any value of K ∈ (3/2, 2) would make both Spain and France better off.



Jan 28,

1. a. suppose $q < 2$. The FOC is

$$p = 2q$$

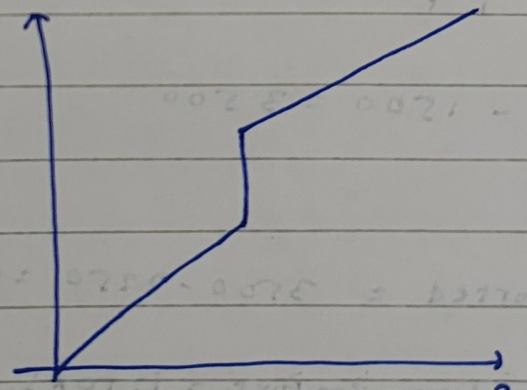
$q^* = p/2$; since $q < 2$, $p < 4$

Now, suppose $q \geq 2$. The FOC is

$$p = 2q + 1$$

$q^* = (p-1)/2$. This assumes $q \geq 2$; $p \geq 5$

For $p \in [4, 5]$, the firm does not want to produce more than $q = 2$ at $MC = 2q + 1$. It also does not want to produce less than $q = 2$ at $MC = 2q$. Hence the firm will produce $q = 2$, when $p \in [4, 5]$



b. suppose $q < 2$. FOC

$$p = 2q$$

$$q^*(p) = p/2 \cdot \text{since } q < 2,\ p < 4$$

suppose $q \geq 2$. FOC

$$p = 2q - 1$$

$$q^*(p) = (p+1)/2 \cdot \text{since } q \geq 2,\ p \geq 3$$

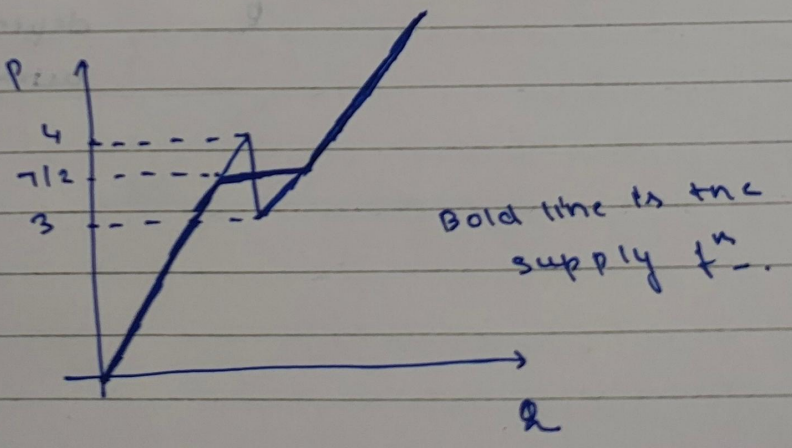
For $p \in [3,4]$, we have two locally optimal solutions. to see which is the global optimum, we can calculate profits. If $q^*(p) = p/2$ then profit equals

$$\pi = pq^* - c(q^*) = \frac{p^2}{2} - \frac{p^2}{4} = \frac{p^2}{4} \quad \text{(I)}$$

If $q^*(p) = \frac{p+1}{2}$, then profit equals

$$\pi = pq^* - c(q^*) = p\,\frac{p+1}{2} - \frac{(p+1)^2}{4} + \frac{p+1}{2} - 2 = \frac{p^2}{4} + \frac{p}{2} - \frac{7}{4} \quad \text{(II)}$$

comparing (I) and (II), we see that optimal supply is $q^*(p) = p/2$ if $p < 7/2$ and $q^*(p) = (p+1)/2$ if $p \geq 7/2$.



Jan, 28

3. a. $Q^d = 5000 - 100p$

$Q^s = 150p$

market eq^n: (Demand = supply)

$5000 - 100p = 150p$

$5000 = 250p$

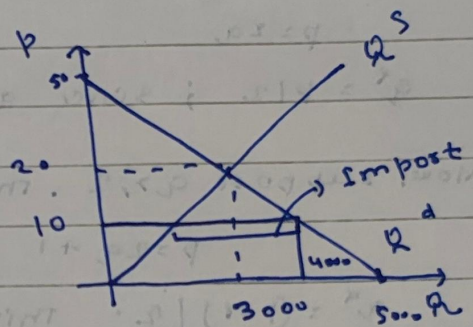
$p = 20$; $Q = 3000$

b. Now, with import, $p = 10$

$Q^d = 5000 - 1000$

$= 4000$

Domestic supply at $p = 10$ $\leftarrow Q^s = 1500$



Amount imported = 4000 - 1500

= 2500

c. After tariff, $p = 10 + 5 = 15$

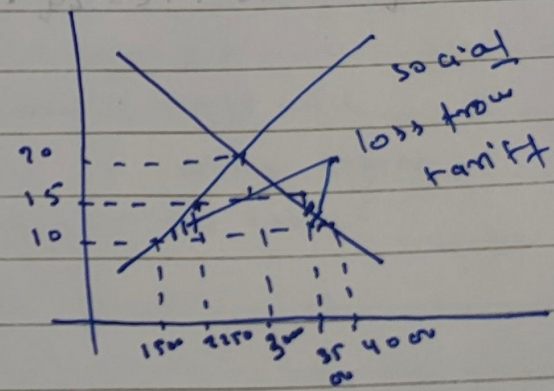
$Q^d = 5000 - 1500 = 3500$

$Q^s = 2250$

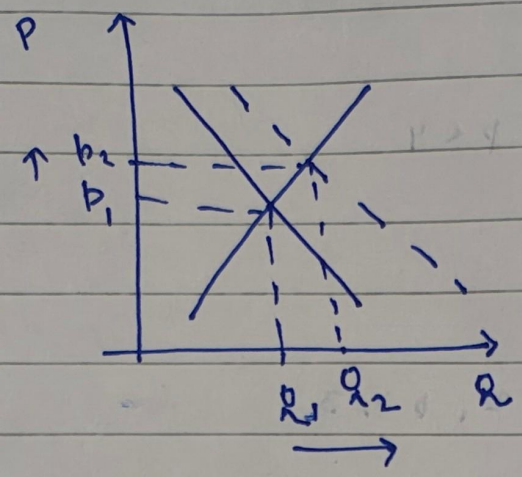
Amount imported = 3500 - 2250 = 1250

Govt revenue from import = 1250 × 5

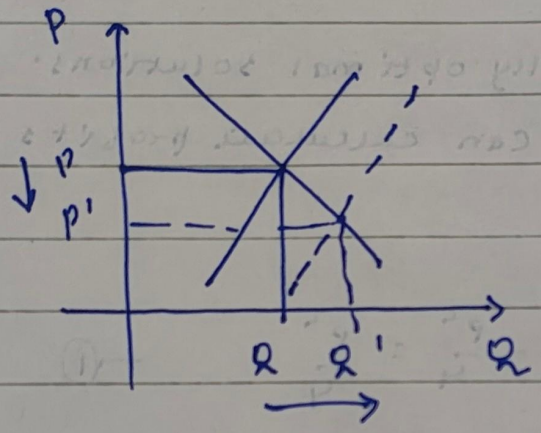
= 6250



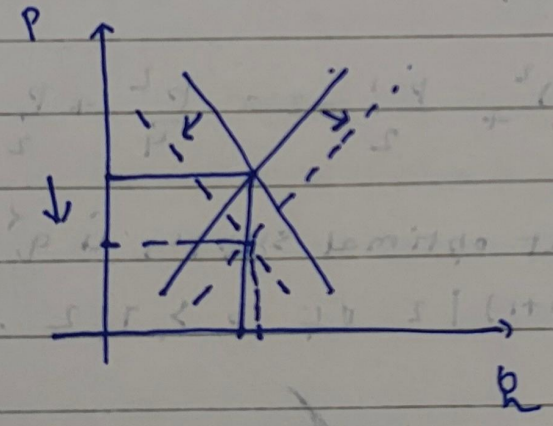
4. a.



b.



c.



Demand decreases
Supply increases

Price will fall but Quantity change will depend on which effect outweighs the other.