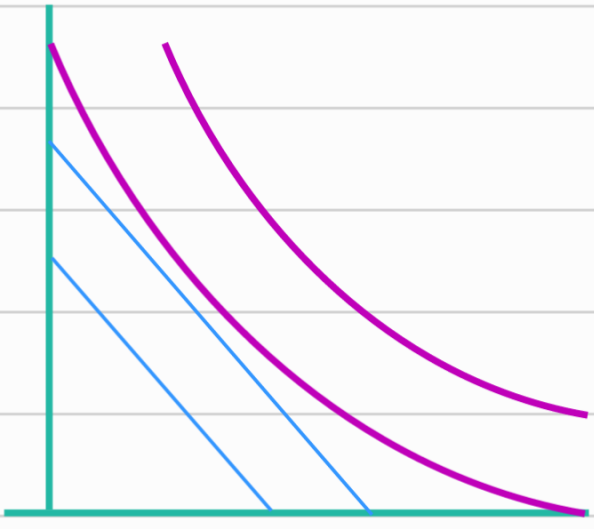
Section A

Question 1

Isocost curves represent combinations of goods that total to the same cost. Purchasing less of one good frees money to be spent on other goods, and thus isocost curves are always downward sloping. If the cost of goods functions are linear, then isocost curves will also be linear. In practice, we tend to get better deals on bigger orders, so the marginal cost of additional goods is a reducing function. Hence, the isocost curves become convex to the equilibrium. - **True**



Question 2

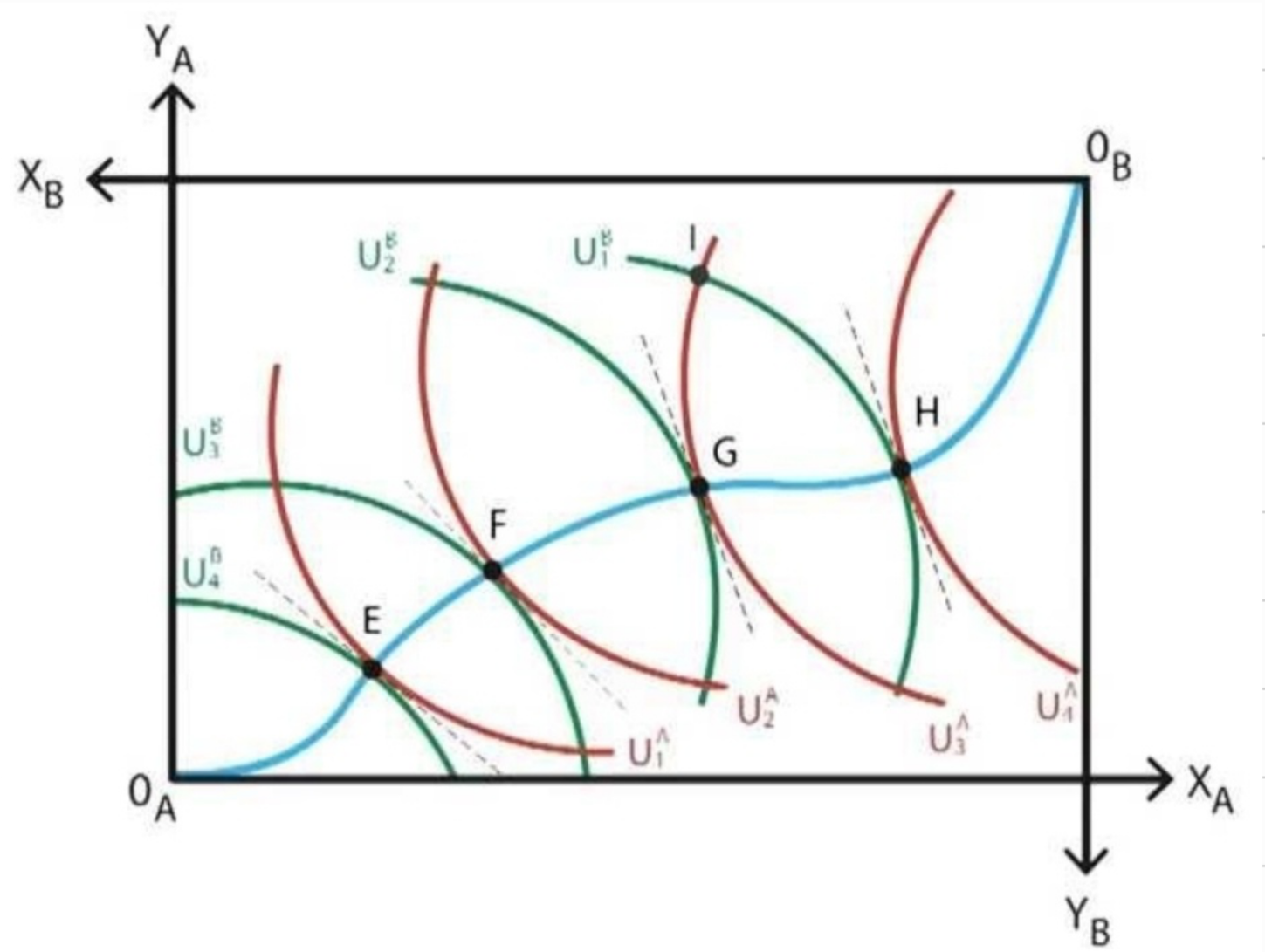
Kai/Alexei	Insist on book	Change topic
Insist on book	2,2	0,3
Change topic	0,0	1,3

Alexei has a dominant strategy "Change Topic", which he prefers to do regardless of Kai's actions. - **True**

Question 3

False, since the tax will cause market inefficiencies in the form of deadweight loss by misaligning incentives, and without pricing mechanisms the government will be unable to provide an efficient supply.

Question 4



The Edgeworth Box tracks indifference curves of two parties for combinations of two goods to create a contract curve, which connects points of tangency between the two sets of indifference curves, representing optimal resource

distribution (Pareto Efficiency). eg. Robinson Crusoe, Friday.

Flase, each point on the graph denotes a particular allocation, the endowment point being the initial resource allocation before trade between the two parties.

Question 5

$$C = a + cY$$
$$G = G_0$$
$$I = I_0 - br + jY$$

for $a, b, j > 0$

$0 < c < 1$.

$$Y = C + G + I$$
$$= a + cY + G_0 + I_0 - br + jY$$

$$Y - cY - jY = a + G_0 + I_0 - br$$

$$Y = \frac{a + G_0 + I_0 - br}{1 - c - j}$$

False - since the multiplier is : $\frac{1}{1 - c - j}$

Question 6

True, if there is free flow of capital, markets will arbitrage any differences in purchasing power.

Question 7

False, since a reduction in interest rates reduces the discounting of assets (increasing the present value of investments) and reduces the return on cash and cash equivalents (money markets), such that the reduced opportunity cost of investing incentivises more investment.

Question 8

True, if the rise in oil prices can be attributed to seasonal or temporary causes, the monetary authority is unlikely to intervene.

Section B

Question 9

a) $P = 150 - 2Q$

$C = 6Q$

$\rho = Q(150 - 2Q) - 6Q$

$= 144Q - 2Q^2$

$\rho' = 144 - 4Q$

$= 0$ when $Q = \frac{144}{4} = 36$

for which $p = 36(144 - 2(36))$

$= £2,592.$

$P = £78$

$Q = 36$

total profit $= £2,592$

*Bertrand-Nash Equilibrium is that the **Price = Marginal Cost.***

b) $PQ = C$

$Q(150 - 2Q) = 6Q$

$144Q - 2Q^2 = 0$

$Q(144 - 2Q) = 0$

so $Q = 0$

or $Q = \frac{144}{2} = 72$

$P = 150 - 2(72)$

$= £6$

$Q = q_P + q_{GP} = 72$

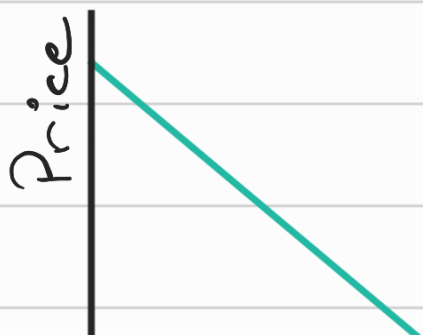
total profit $= 0$

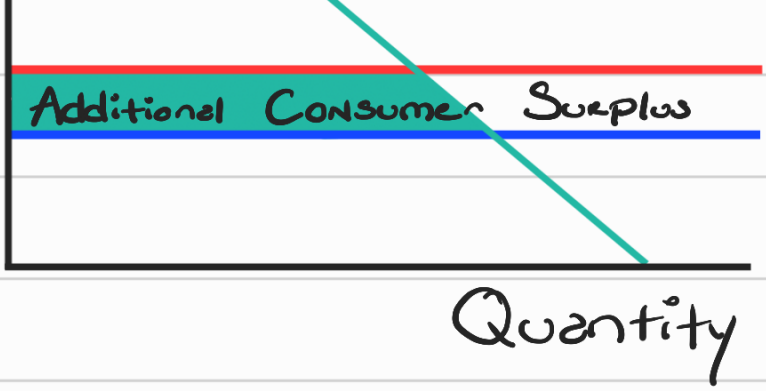
Consumers gained since there was an

increase in supply at a lower price.
Generic Pharma are not making any profits but they were not making any before either.
Pfizer lost their ability to produce this drug profitably

c) If additional manufacturers joined the market, there would be no change in price or total quantity. However, the existing firms would need to produce less so that total supply remains at equilibrium.
Since the MC curve is flat, MC = 6, there could technically be an infinite number of firms.
Although none would be making any profits.
Consumers would go unaffected.

d)

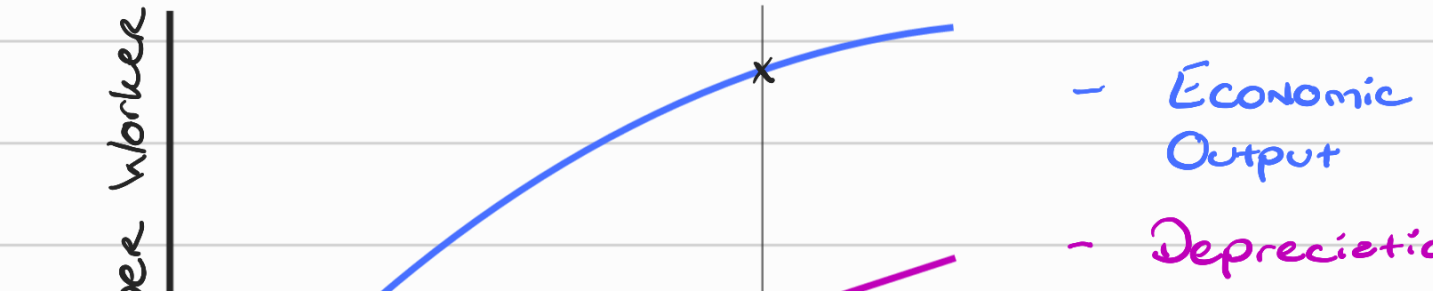


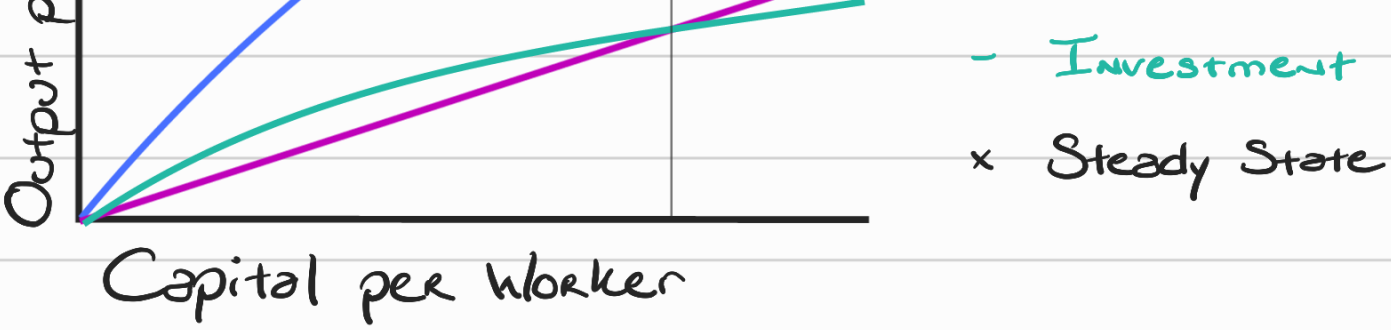


The subsidy reduces the MC curve, bringing the equilibrium position downward on the demand curve.
Thus, prices would decrease, quantity would increase, and there would be an improvement in overall welfare

Question 10

In Solow's Growth Model, the Steady State refers to a situation where Capital per Worker (K) and thus Output per Worker are constant over time. Given labour force growth (n) the total output (Y) can still grow.





Capital per Worker $k = \frac{K}{L}$

Output per Worker $y = \frac{Y}{L}$

Production function $y = f(k)$

$\frac{dk}{dt}$ = investment per worker
- break even investment

$= s \cdot f(k) - (\delta + n)k$

where $s \cdot f(k)$ is the saving per worker δk is the depreciation and nk accounts for population growth.

At the steady state $\frac{dk}{dt} = 0$

so $s \cdot f(k^*) = (\delta + n)k^*$

b) Damage to the Capital Stock reduces capital per worker and thus output per worker. This reduction in output results in negative growth. As the economy has less capital stock, according to Solow's model, we expect to have less depreciation and relatively greater savings, resulting in faster growth in the short run than prior to the storms. In the long-run, the economy should reach the same Steady State equilibrium.

If the hightened storm activity persists, this could be reflected as a greater depreciation rate, which would result in a lower steady state equilibrium position.

c) $F(K, L) = K^{1/2} L^{1/2}$

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$s = 0.2$

$\delta = 0.04$

$n = 0.04$

$y = f(k) = k^{1/2}$

$$\frac{dk}{dt} = s \cdot f(k) - (\delta + n) k$$

$$= 0.2 k^{1/2} - 0.08 k$$

$$= 0$$

$$0.2 k^{1/2} = 0.08 k$$

$$k^{1/2} = \frac{0.2}{0.08} = 2.5$$

$$k = (2.5)^2 = 6.25$$

Starting from $k = 4$, capital per worker will increase until the steady state $k^* = 6.25$ over time