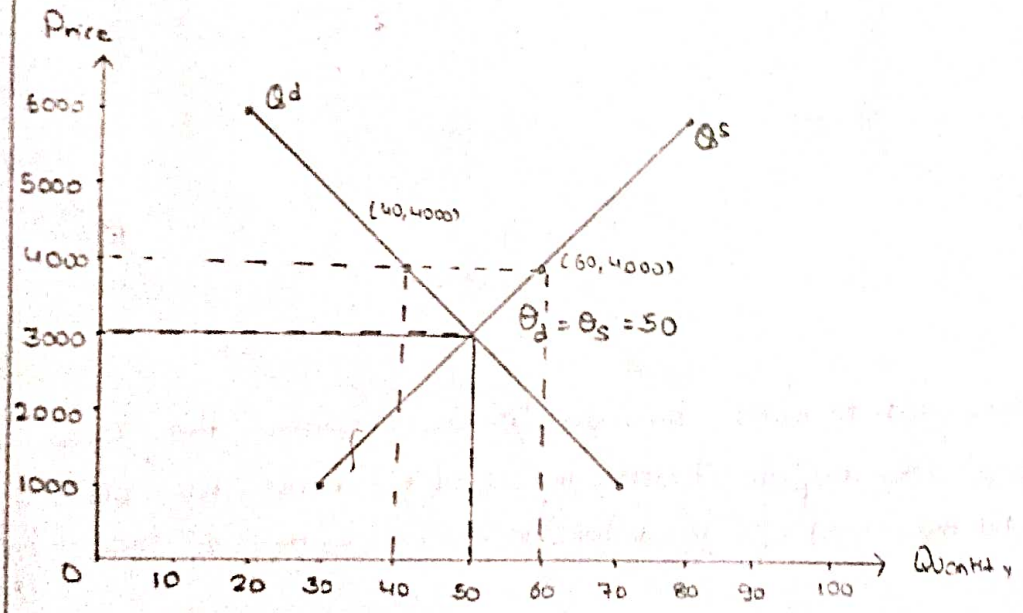
1. Suppose the market and demand schedules for bicycles faced by Atlas Cycles Ltd is as follows.,

Price (Rs.)	Quantity Demanded / Day ('00 No)	Quantity Supplied / Day ('00 No)
1000	70	30
2000	60	40
3000	50	50
4000	40	60
5000	30	70
6000	20	80

a) Draw the supply curve and the demand curve for bicycles from the information given above. What is the equillibrium price and equillibrium quality of bicycles?



At equillibrium quality;

$\theta_d = \theta_s$

∴ Equillibrium quality of bicycles = 50

Equillibrium price of bicycles = 3000

b) If the price of bicycles were 4000, is there a surplus or a shortage? How many units of surplus or shortage are there? Will there will be rise in price or fall?

for Price = 4000

$\theta_d = 40$

$\theta_s = 60$

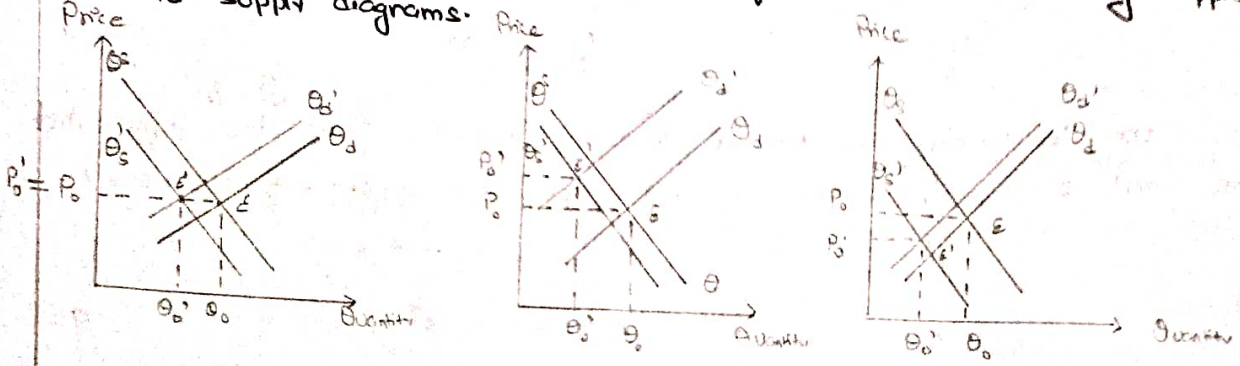
As $\theta_s > \theta_d$

Therefore, As there bicycles supplied is greater than the demand for it. Its a condition of Surplus.

There is an extra of 20 bicycles for 40 in demand at 4000 p.

As supply is more, price of bicycles decreases.

c) Suppose the price of steel used to make bicycles frames increases and an environmental movement shifts towards bicycles. What will happen to the price and quantity demanded and supplied of bicycles? Analyze using appropriate demand - supply diagrams.



P_0 → Equilibrium price

P_0' → Equilibrium price after shifting

θ_0 → initial Equilibrium quantity

θ_0' → Equilibrium quantity after shifting

ε → Equilibrium point

ε' → Equilibrium point after shifting

As the price of steel used to make bicycles frames increases, the cost of production increases resulting in decrease in profit made by sellers. So, sellers will wait till the cost of production decreases resulting in less supply.

Simontaneously,

As demand of supply of bicycles increases, the demand curve shifts right indicating more demand, increasing equillibrium price

As both happen at same time, if rate of supply decrease = rate of demand increase, the equillibrium price is constt,

else, if rate of supply decrease > rate of ~~supply increase~~ demand increase, equillibrium price decreases

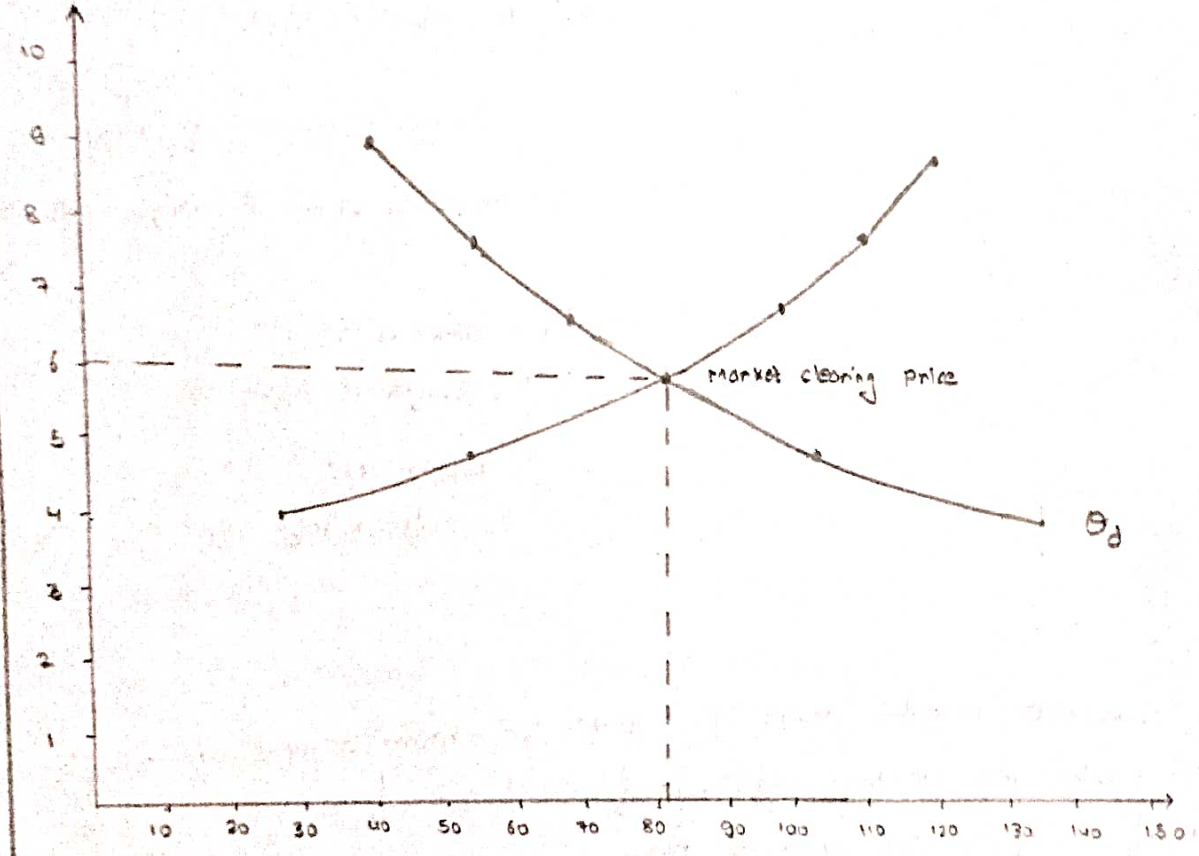
or rate of supply decrease < rate of demand increase, equillibrium price increases

In general, its ambiguous and can't be determined, while equilibrium quantity decreases in all case

The market for orange has the following demand and supply scheduled.

Price	Quantity demand (kg)	Quantity supplied (kg)
4	135	26
5	104	53
6	81	81
7	68	98
8	53	100
9	39	121

a) Graph the demand and supply curves. What is the market clearing price and quantity in the market?



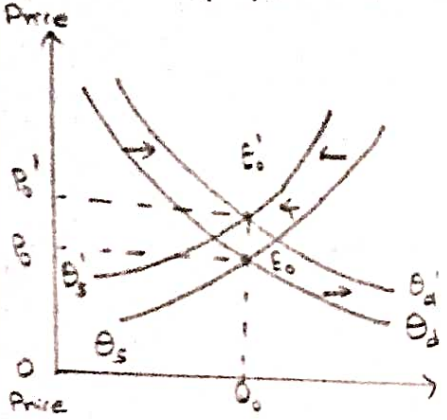
Market clearing price = Equilibrium point price = 6

$\theta_d = \theta_s$ = 81 = Market clearing quantity

b) If the actual price in this market were above the market clearing price, what would drive the market towards the equilibrium?

If price is more then the market clearing price, in order to reach the equilibrium again, the demand of that article should increase, with ~~decrease~~ increase in supply at the same rate as demand increase reaching a new equilibrium for market at increased equilibrium price.

c) Consider the following events : Scientists reveal that consumption of oranges decreases the risk of diabetes, and at the same time, farmers use a new fertilizer that make oranges tree more productive. Explain with the help of suitable demand - supply diagram, what effect these changes have on demand, supply, quantity demanded, quantity supplied and prices of orange.

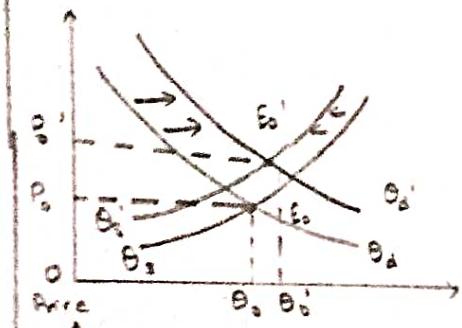


P_0 = Equilibrium price of orange

P_0' = Equilibrium price of orange after shift.

E_0 = Equilibrium Point

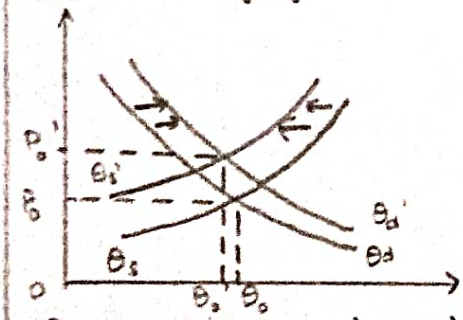
E_0' = new Equilibrium point



θ_0 = Equilibrium quantity of orange

θ_0' = Equilibrium quantity of orange after shift

As demand ↑es;
θ_d shifts to right



As supply ↑es;
θ_s shifts to left

for the scientists reveals, there is a gonna be more demand of oranges in market by public, also as the efficiency of production of oranges increases, the supply of oranges also increases. Now,

Case 1:

Demand increase = Supply increase ; Equilibrium price increases with Equilibrium Quantity being same

Demand increase > Supply increase; Equilibrium price increases, with Equilibrium Quantity of orange in market increases

Demand increase < Supply increase; Equilibrium price increases, with Equilibrium Quantity Orange Quantity in market decrease

Buyers in the ice-cream market demand 205 cups of icecream when price is zero and decrease the purchase of ice-cream by 2 cups for every one unit increase in price. Supplier will only start to supply ice-cream cup when a price greater than Rs 15 per unit is available and ~~therefore~~ thereafter increases supply by 3 units (3 cups of ice-cream) for every 1 unit/Rs. increase in price.

a) Write down the equation of the demand and supply functions in the form $\theta = f(p)$.

Price	Demand (Ice cream)	Supply
0	205	—
15	175	0

for every 2 cups↓, price increases by 1 unit.

$\theta_d = f(p) = a + bp$

$\therefore a = 205$ and $b = -2$

$\therefore \theta_d = 205 - 2p$

for every unit price ↑es, Supply increases by 3 more icecream

$\theta_S = d + cP$

$\therefore d = -45$, $c = 3$

$\theta_S = -45 + 3p$

b) Find out the equillibrium price and corresponding quantity demanded and supplied in the market. Use both graph and algebric equations and answer the question.

for equillibrium quantity,

$\theta_d = \theta_S$

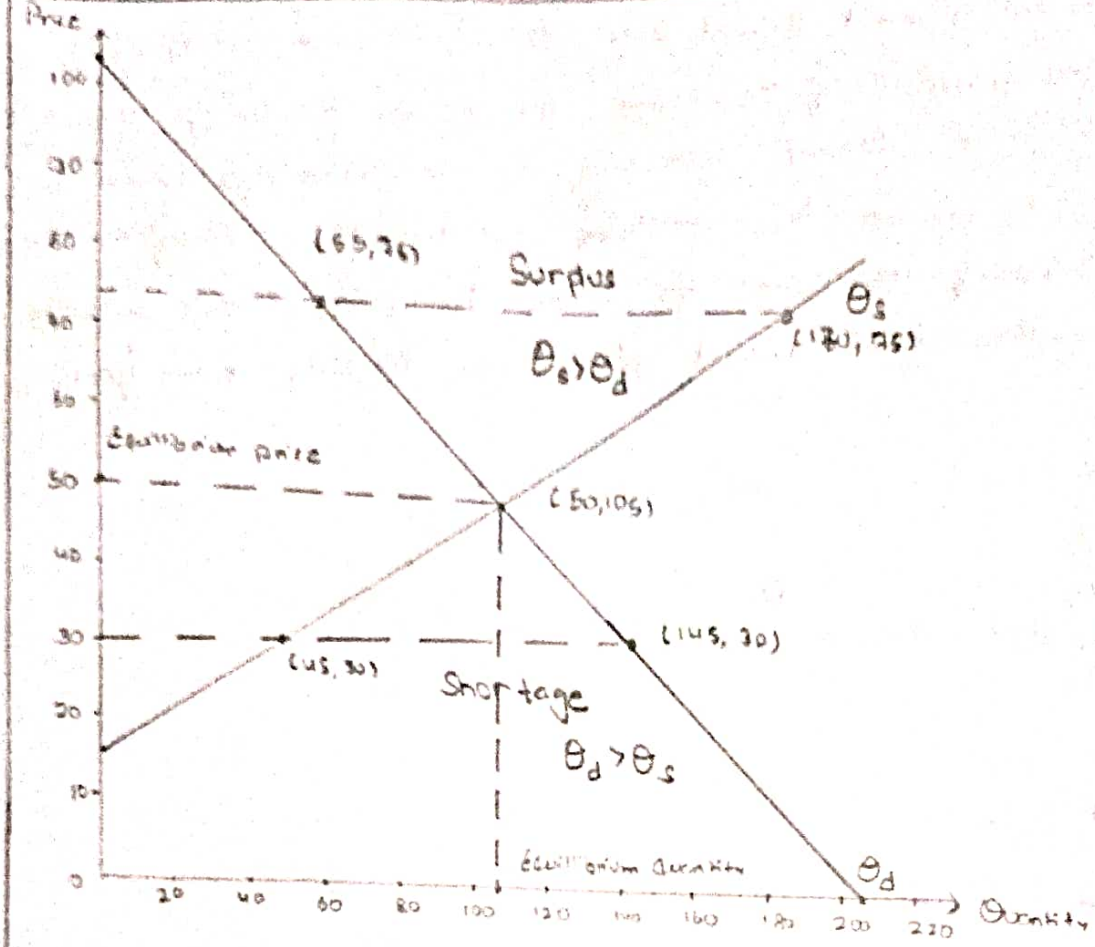
$\Rightarrow 205 - 2p = -45 + 3p$

$\Rightarrow$ ~~180~~ ~~220 = 5p~~ $250 = 5p$

$\Rightarrow p = $ ~~[illegible]~~ Equillibrium ~~price~~ price $= 50$

and

Equillibrium quantity = ~~205 [illegible] x 2~~ $= 205 - 100 = 105$



Case	Price	Demand	Quantity Supply
A	0	205	—
B	15	175	0
C	30	145	45
D	45	115	90
E	60	85	135
	75	55	170
	90	25	205
	102.5	0	

c) Analyze the market if the actual price is Rs 75 and Rs 30 per up

When price of icecream is Rs 30, the demand of icecream is more then supply hence shortage and in the market.

While when price is Rs 75, the demand is less then supply, Hence there is a surplus of icecream in the market.

A farm produce, say Wheat, has the following demand and supply function: $Q^D = 1700 - 50P$ and $Q^S = 300 + 20P$, where Q^D (MT), Q^S (MT) and P (Rs) refer to quantity demanded, quantity supplied and price of the product

a) find the market clearing price.

At market clearing price,

$Q^D = Q^S$

$\Rightarrow 1700 - 50P = 300 + 20$

$\Rightarrow 1400 = 70P$

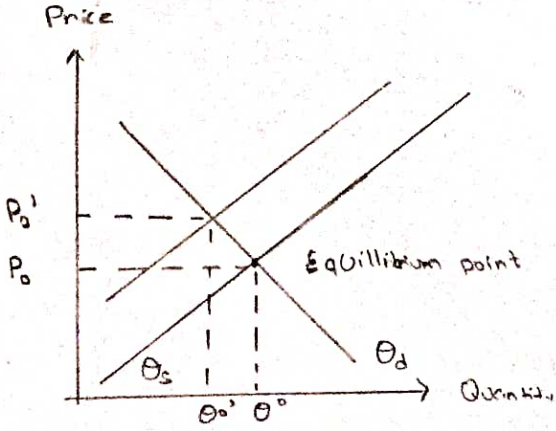
$\Rightarrow P = 20$ = market clearing price

~~and Q~~

b) If actual price of the product is Rs10, analyze the market situation.

As Product Price is lower then the market clearing price, we can take it a case of product surplus, with demand decreasing or being constant with supply increasing in the market, resulting in price decrease.

c) Agricultural scientists innvotes a new variety of seed which increases the productivity of wheat. Using the supply-demand model graphically, analyze the effect of introduction of new seed on demand, supply, price and quantity demanded and supply of wheat.



Supply increases shifting the curve to right.

P_0 → Equilibrium price

P_0' → Equilibrium price after shifting

Q_0 → Equilibrium quantity

Q_0' → Equilibrium quantity after shifting

As production of wheat increases, the supply of wheat increases in market. With its demand being constant in market and supply increases, there is gonna be a case of surplus which leads to decrease in the price of wheat.