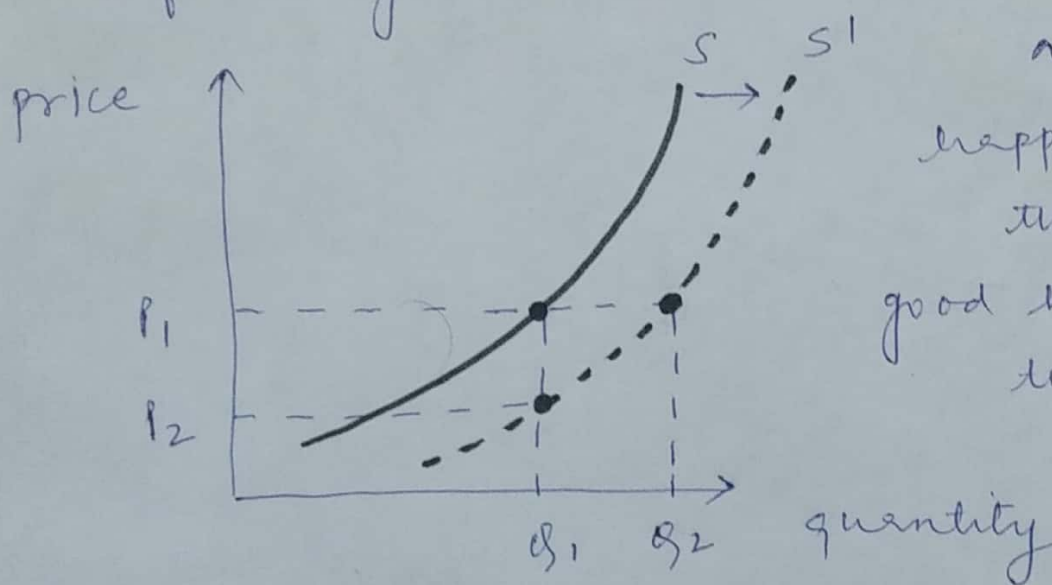# Lecture 2

→ Supply - demand analysis ←

<mark>supply curve</mark> relationship between quantity of a good that producers are willing to sell and the price of good.
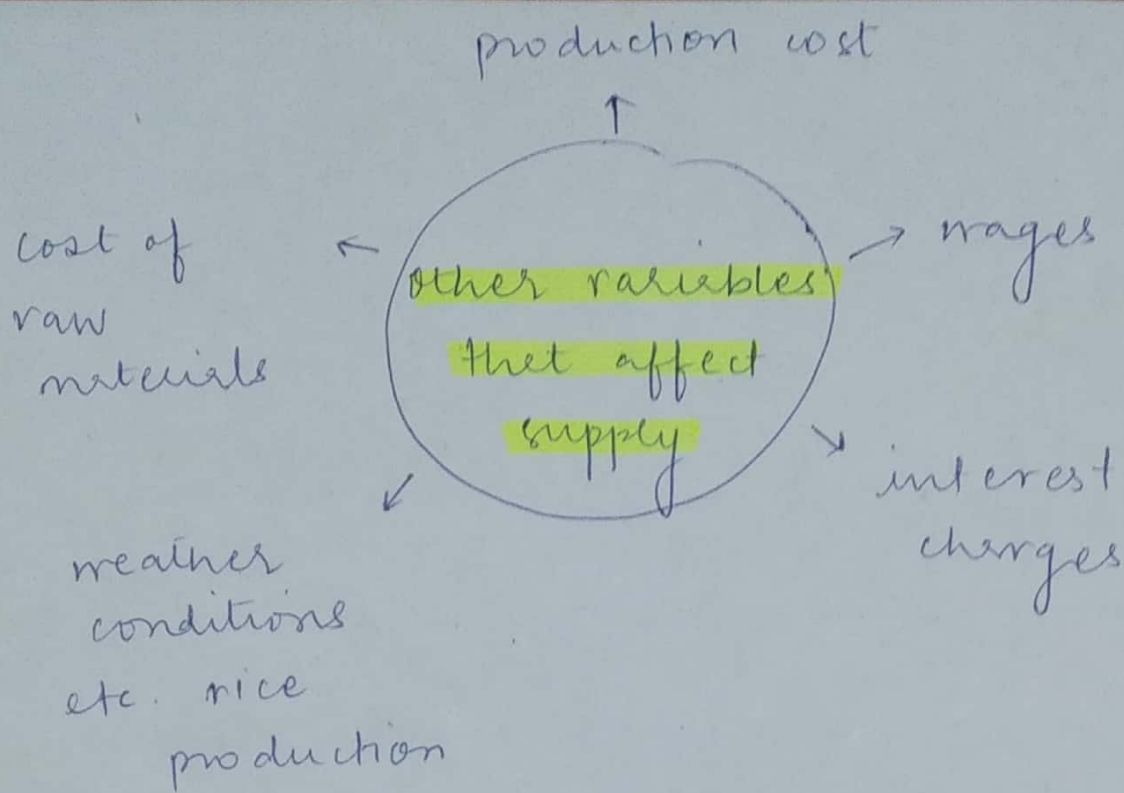
$QS = QS(P)$ ↗ quantity supplied at price P

↳ quantity supplied

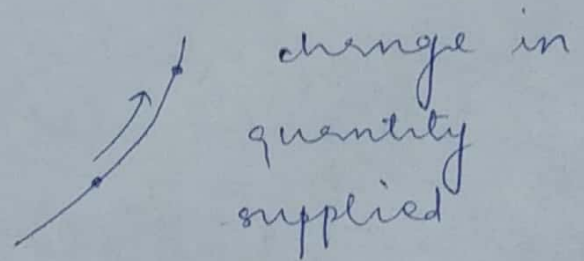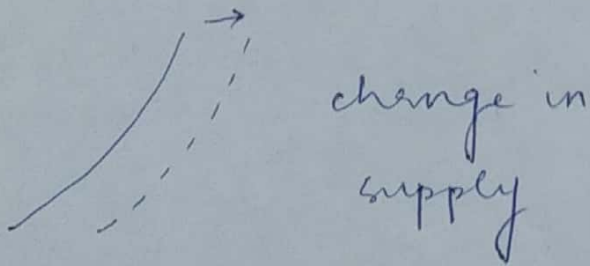* as price ↑es you want to sell more of the good

anything bad happens → shift to the left

good happens → shift to the right

if production cost falls; meaning that firms can produce the quantity at a lower price or more quantity at the same price. supply curve shifts to the right. At the same price P_1 you are willing to sell Q_2

production cost

↑

cost of
raw
materials ← (==other variables== ==that affect== ==supply==) → wages

↓ → interest
charges

weather
conditions
etc. rice
production

==market price== → you move along
==is affected== the supply curve

==anything other== → supply curve
==than the== itself shifts
==market price==
==is affect==

↗ change in ↗ change in
supply quantity
supplied

2.

<u>demand curve</u> : relationship between the quantity of goods that consumers are willing to buy and the price of the good.

$$Q_D = Q_D(P)$$
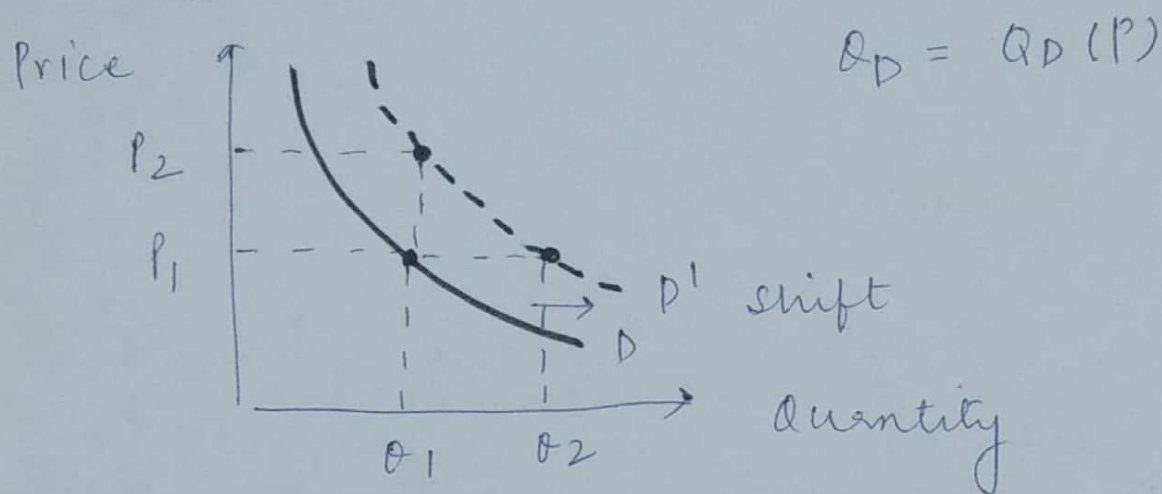
Price

<u>if own price is affected</u> → we'll move along the demand curve

<u>if something other than the own price is affected</u> → demand curve shifts
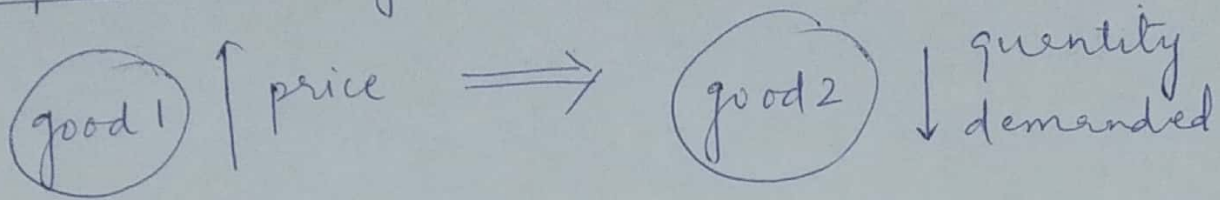
as income increases, quantity demanded also ↑ es

at the same price, you are willing to buy more of the product

<u>substitutes</u> : two goods for which

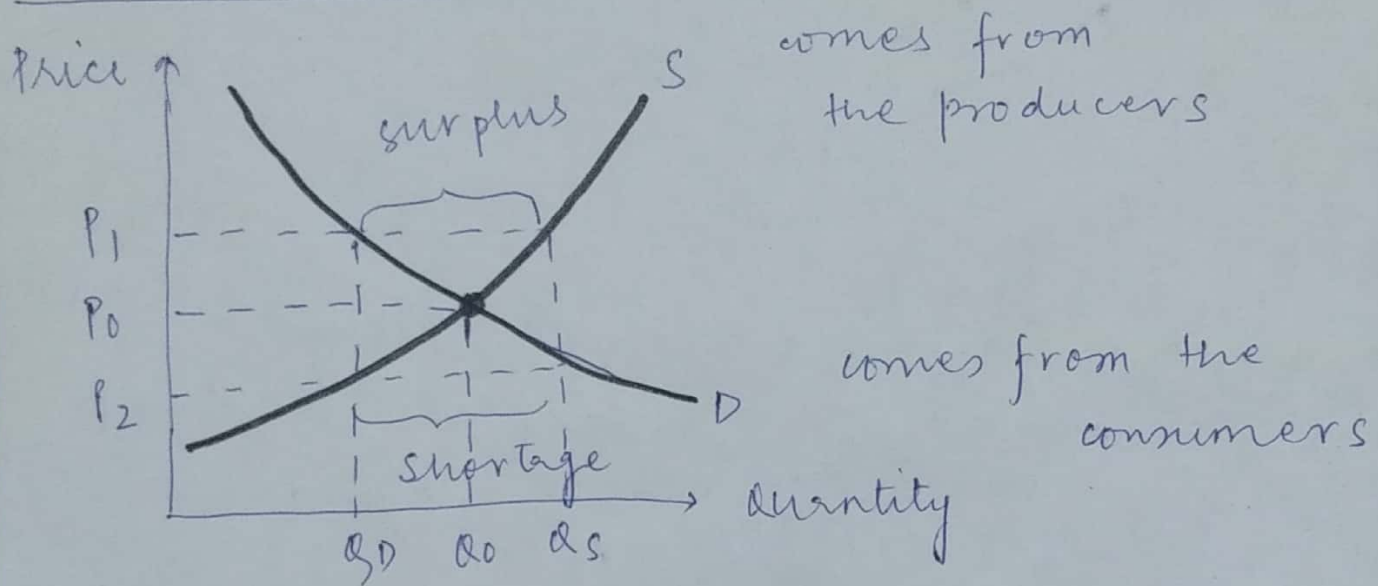(good 1) ↑ price ⟹ (good 2) ↑ quantity demanded

eg. tea and coffee

3.

<u>complements</u> 2 goods for which

(good 1) ↑ price ⟹ (good 2) ↓ quantity demanded

eg. socks and shoes ; tea and sugar

MARKET MECHANISM :

Price ↑

S   comes from
the producers

surplus

P_1

P_0

P_2

shortage

→ Quantity

D   comes from the consumers

Q_D Q_0 Q_S

P_0 and Q_0 are the <mark>equilibrium price</mark> & <mark>equilibrium quantity</mark>.

at P_1 $Q_S > Q_D$

↓   ↓

q supplied   q demanded

<mark>$Q_S = Q_D$</mark>   means   equilibrium

<u>EQUILIBRIUM</u>   price   that   equates   the
quantity   supplied   to the   quantity   demanded
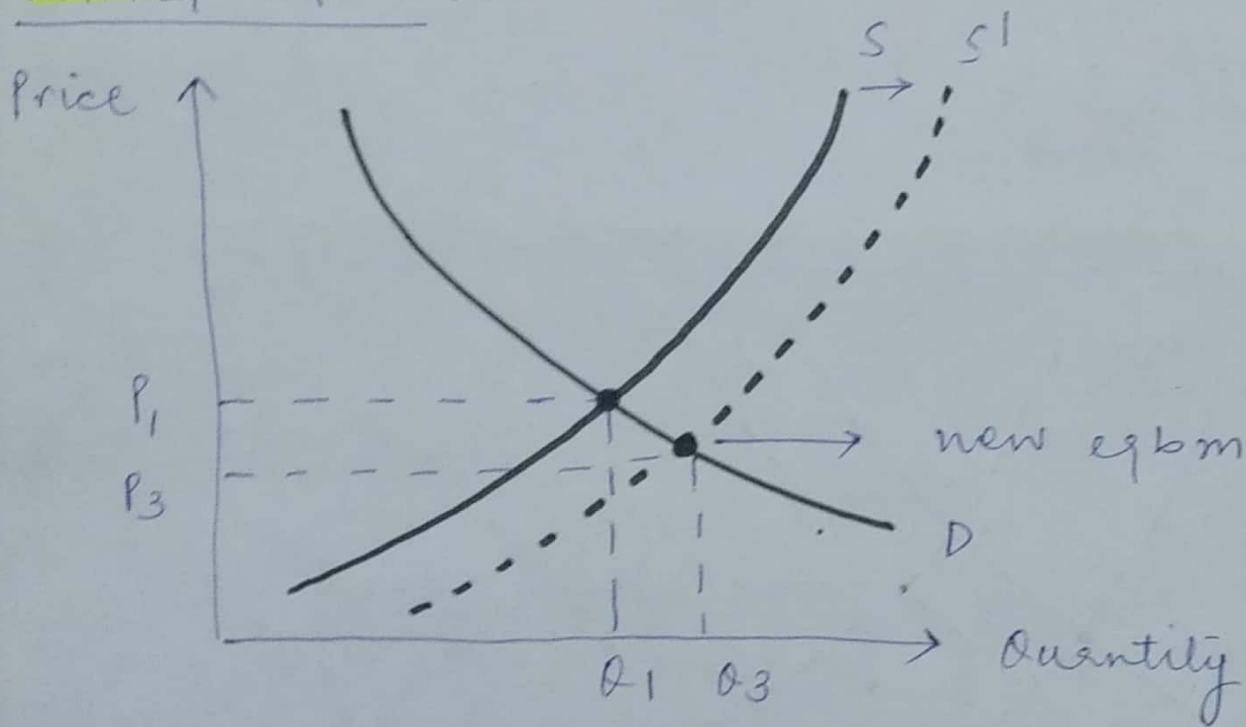(<mark>equilibrium / market   clearing   price</mark>)   4.

<u>**market mechanism**</u> tendency in a free market for price to change until the market clears

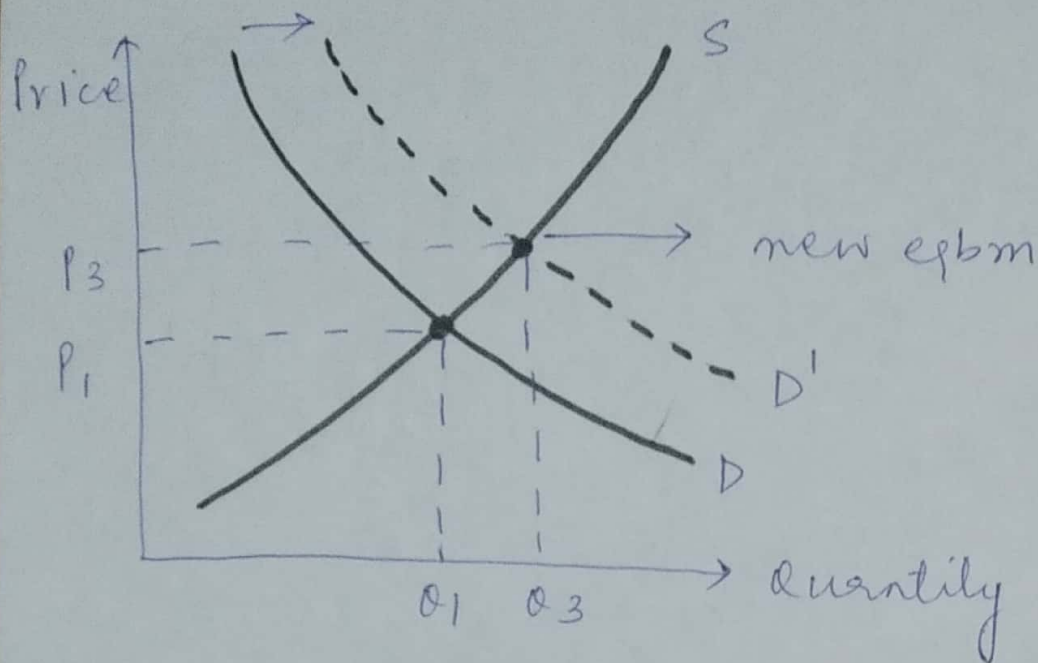<u>**surplus**</u>   Qs > Qd

labour wage ↓ es then govt puts min wage

<u>**shortage**</u>   QD > QS

<u>**MARKET EQBM :**</u>

Price ↑

S   S¹

P₁ ┤- - - - - - - - -

P₃ ┤- - - - - - - - -   new eqbm

D

→ Quantity

Q₁ Q₃

production cost falls   (right shift)

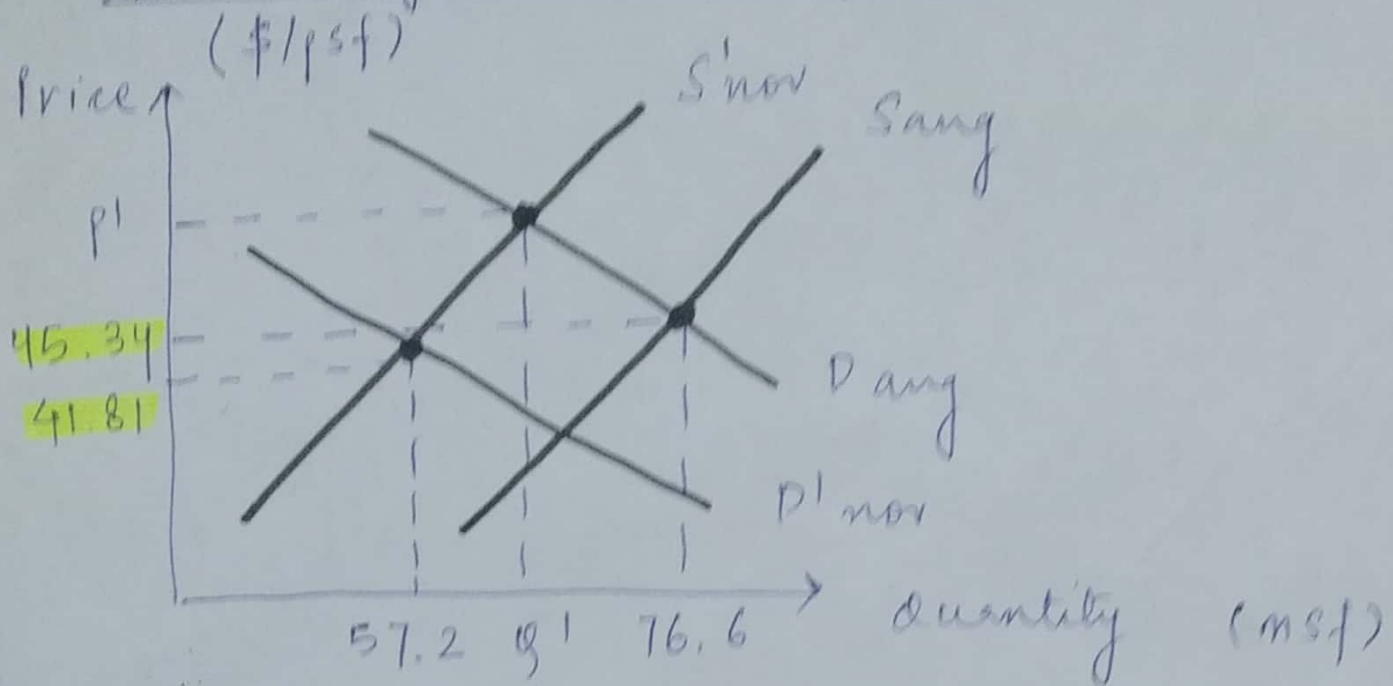| P↓ | Q↑ |

5.

income increases (right shift)

$$\boxed{P \uparrow \quad q \uparrow}$$

supply and demand both changing
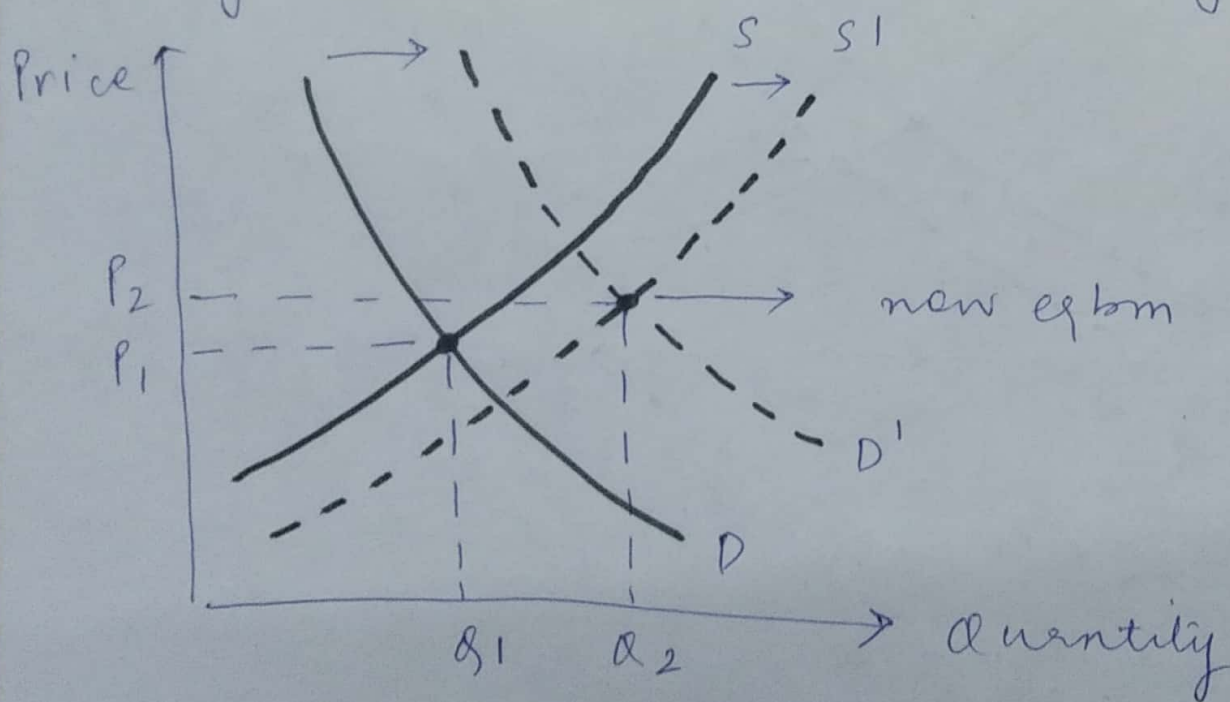
will depend on the amount by
which each curve shifts and
the shape of each curve

6.

for new york office space

($/psf)

Price ↑

P¹

45.34

41.81

S¹nov   Sang

D ang

D¹ nov

→ Quantity (msf)

57.2 q¹ 76.6

as we can see, **rental price fell**

elasticity % change in 1 variable
resulting from a 1% ↑ in another

price elasticity of demand

% change in QD of a good resulting
from 1% ↑ in its P

$$E_P = (\% \Delta Q)(\% \Delta P)$$

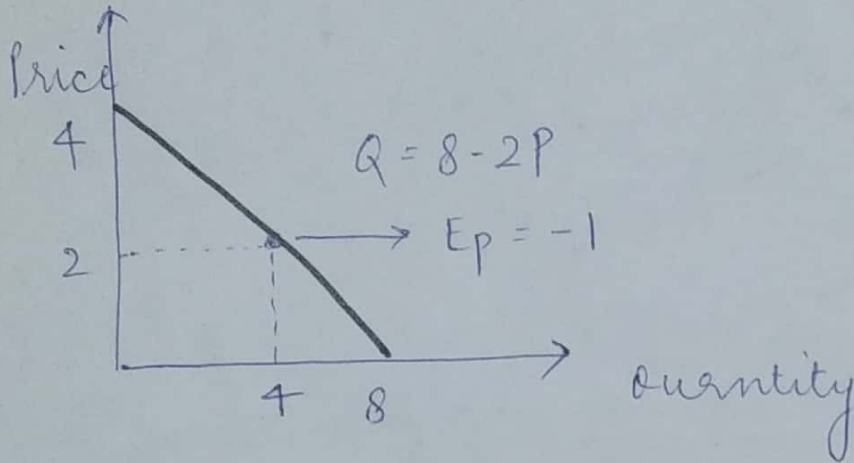$$E_P = \frac{\Delta Q/Q}{\Delta P/P} = \frac{P}{Q}\frac{\Delta Q}{\Delta P} \rightarrow \text{inverse of slope of demand / supply curve}$$

7.

Hence E_p is a function of slope and where you are on the demand curve and supply curve

↗ demand curve thats straight
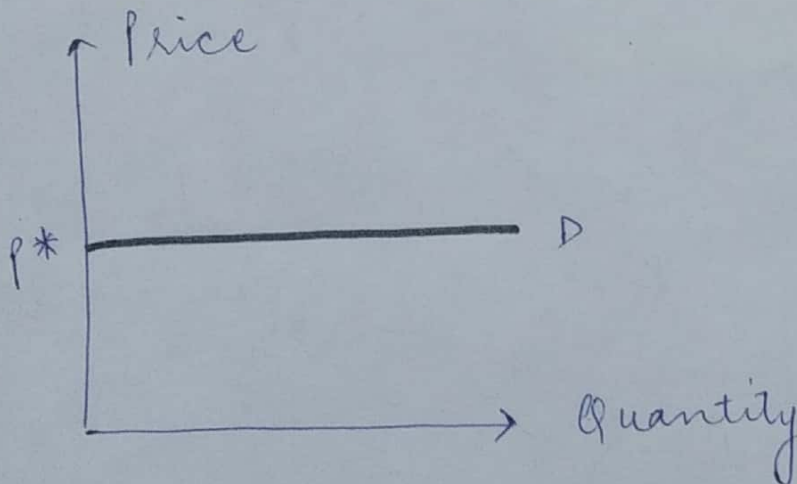
<mark>linear demand curve</mark>

$$Q = a - bP$$

$$E_p = \frac{2}{4} \times -2 = -1$$

Q = 8 - 2P

$\longrightarrow E_p = -1$

<mark>near top</mark> → $E_p = -\infty$

<mark>near right</mark> → $E_p = 0$

<mark>infinitely elastic demand</mark> curve

$$\frac{\Delta Q}{\Delta P} = \infty$$

tiny change in price leads to enormous change in ~~elastic~~ demand

<mark>small change in P → affects largely</mark>
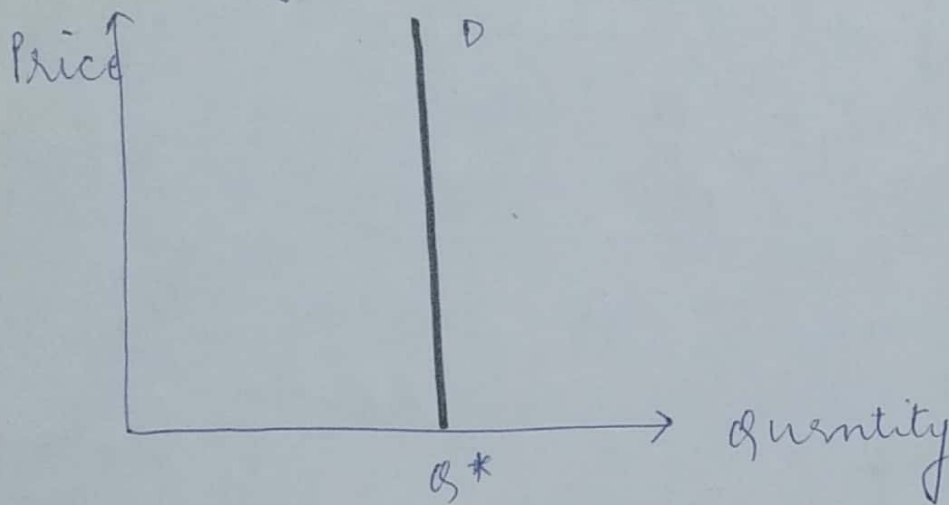
8.

infinitely elastic demand

consumers will buy as much of a good as
they can get at a single price

for ↑P   quantity demanded ↓
                              0
for ↓P quantity demanded ↑ es without limit

infinitely in elastic demand

Price

$$\frac{\Delta Q}{\Delta P} = 0$$

→ Quantity

Q*

someone addicted to smoking / drinking
govt can change as much tax as they
want as the demand remains same

consumers will buy a fixed quantity
regardless of the price

income elasticity of demand % change

in the quantity demanded resulting
from a 1% ↑ in income

9.

$$E_I = \frac{\Delta Q/Q}{\Delta I/I} = \frac{I}{Q} \frac{\Delta Q}{\Delta I}$$

==cross priced elasticity== of demand

% change in QD of a good resulting from a 1% ↑ in P of another

tells us weather the goods are compliments or ~~suplements~~ substitutes

$$\boxed{E_{Qb} I_m = \frac{\Delta Qb/Qb}{\Delta I_m/I_m} = \frac{I_m}{Q_b} \frac{\Delta Q_b}{\Delta I_m}}$$
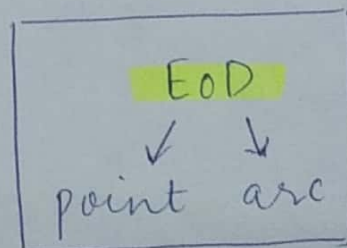
(where b and m are 2 diff goods)

[thanks @ Neha :)]

==price elasticity of supply== % change in QS resulting from a 1% ↑ in P

==point elasticity of demand== price elasticity at a particular point on the demand curve.

==arc elasticity of demand==
price calculated over a range of prices.

$$E_p = \left(\frac{\Delta Q}{\Delta P}\right)\left(\frac{\bar{P}}{\bar{Q}}\right) \rightarrow avg$$

$$\bar{P} = \frac{P_1 + P_2}{2} \qquad \bar{Q} = \frac{Q_1 + Q_2}{2}$$

EoD
↓ ↓
point arc

10.