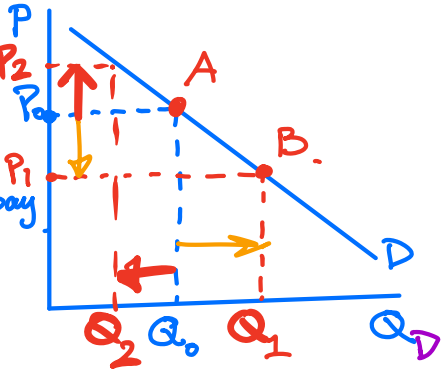
# Chapter 4 Demand

We will discuss the demand and supply of a perfect competition and how the market equilibrium is attained.

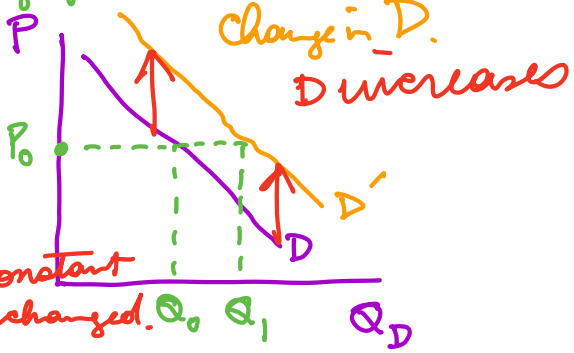
***Demand*** is the *relationship* between the price and the quantity the buyer(s) is (are) *willing* and *able* to buy.




- At a given price, the quantity bought is called the ***quantity demanded***.
- Is this statement correct? 'When price decreases, the demand is higher.'

**Change in Demand and Change in Quantity Demanded**

- *Demand increases*: At a given price, the quantity demanded increases.
- *Quantity Demanded increases*: When price decreases the quantity demanded increases.




**Law of Demand:** Given all factors being equal, if the price decreases ⟹ the quantity demanded increases.

⇔ Price and quantity demanded have inverse relationship

⇔ Demand curve has negative slope

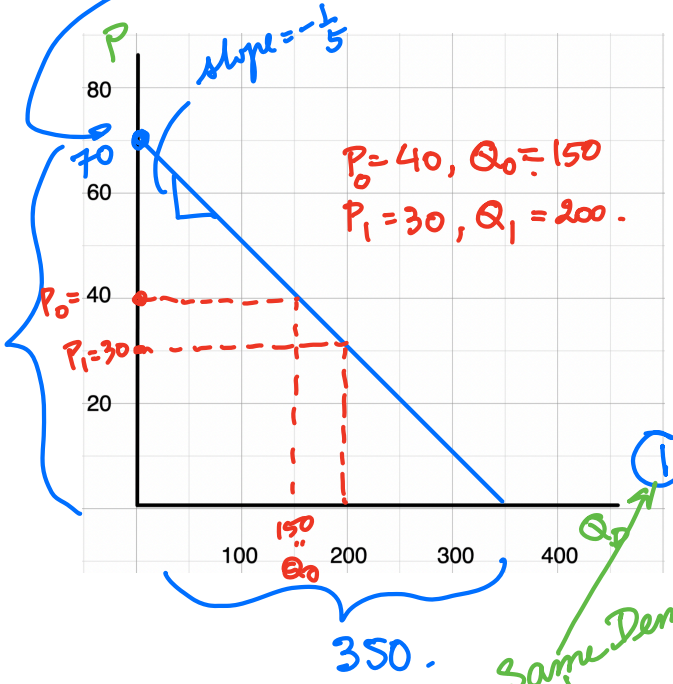
**Example**: A demand curve is given by a function,

Linear Demand. $Demand: P = 70 - \frac{1}{5}Q_D$ (slope)

$(Q_D=0, P=70)$
$(P=0, Q_D=350)$

slope $= -\frac{70}{350} = -\frac{1}{5}$

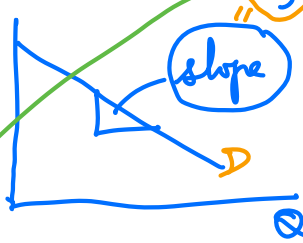
Plot of Demand Curve:




Economists always draw Demand with $Q_D$ on horizon axis. P on vertical axis.

But when economists write equation for demand, they can write

① Demand: $P = 70 - \frac{1}{5}Q_D$. ✓




same Demand.

$P = 70 - \frac{1}{5}Q_D$

$-\frac{1}{5}Q_D = -70 + P$

$Q_D = 350 - 5P$

② Demand: $Q_D = 350 - 5P$. ✓

so $-5$ is not the slope of D

but $-5$ is $\frac{1}{\text{slope}}$ of D

**Factors that can change the Demand**

1. Income

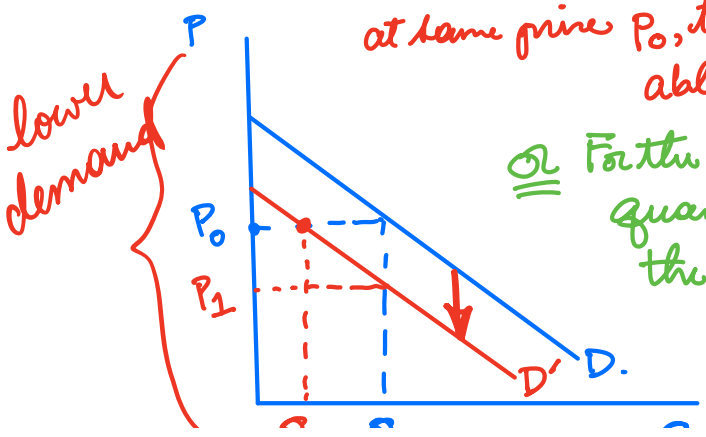
COVID-19 causes the buyer's income decreases.

some might have higher income Grab, Lineman, health care workers

their demand for a given product is lower.

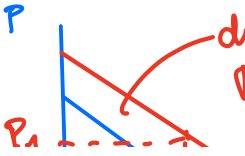
food

⇒ Demand decreases.



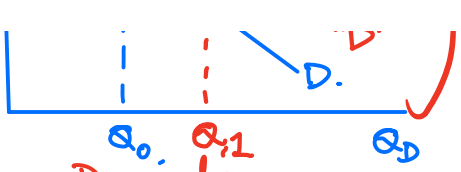

at same price $P_0$, the buyers are willing and able to buy less from $Q_0$ to $Q_1$.

≡ For the buyers to buy the same quantity demanded at $Q_0$ the price has to be lowered to $P_1$




don't have to be parallel.

higher demand




Demand increases

2. Population (number of buyers)

more buyers ⇒ higher demand.
Free trade agreement.

Instant Noodle Lower income
⇒ higher demand.

3. Taste of Consumers fashion.

4. Expectation gasoline
⇒ Buy more today!

5. Prices of related goods

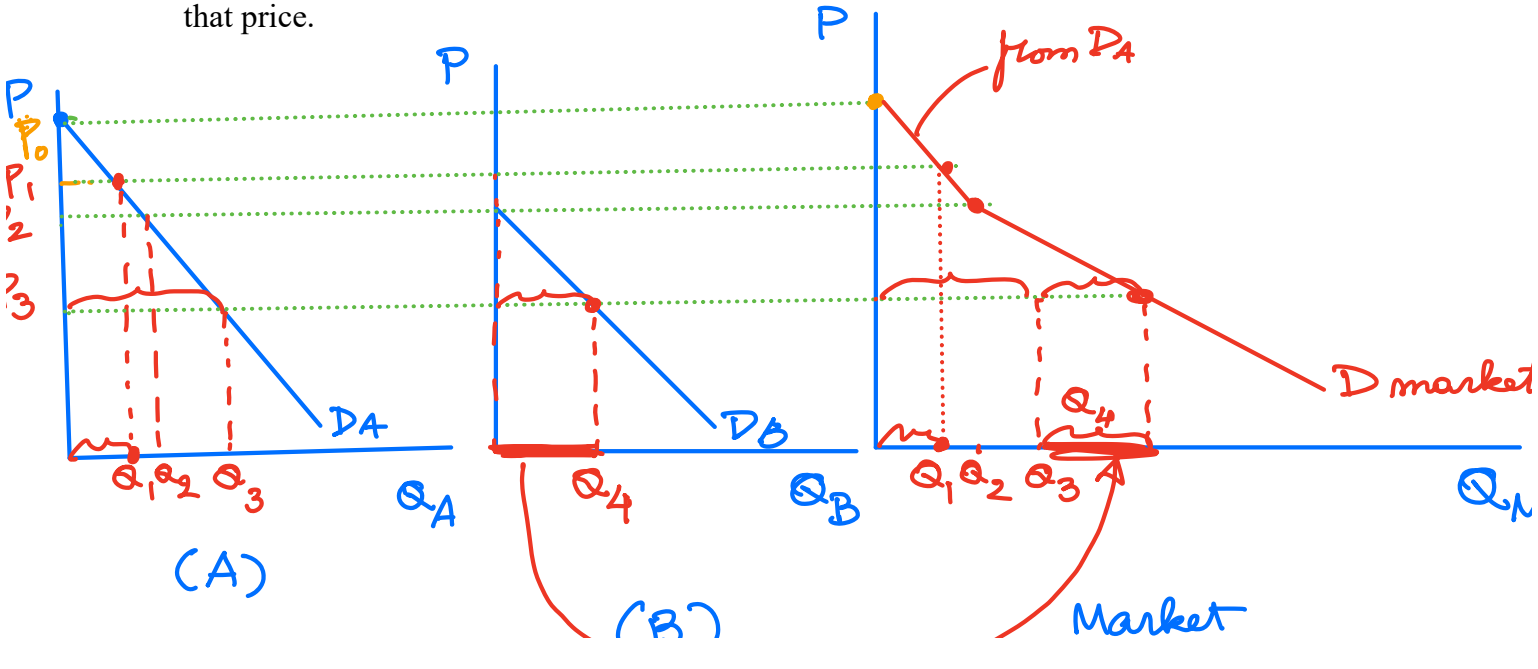
a. Substitutes: Coffee + Tea. Pepsi + Coke.
If the price of Pepsi is higher, the demand for Coke is higher.
same direc

b. Complementary: X & Y are consumed together.

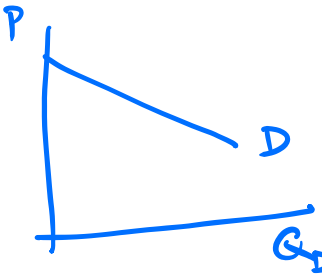
Ex. Car + gasoline. If gasoline price is lower, the demand for car is higher. opp. direct

**Individual and Market Demands**

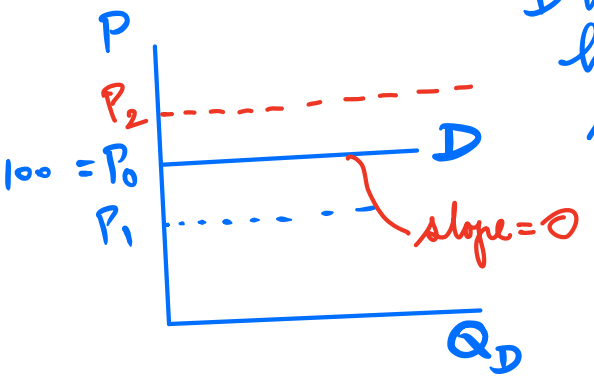
- Market demand is the summation of individual demands of all consumers in the market.
- At each price, the quantity demanded of the market is sum of all quantities demanded of all consumers at that price.



**Extreme Cases of Demand Curve**




- Horizontal Demand

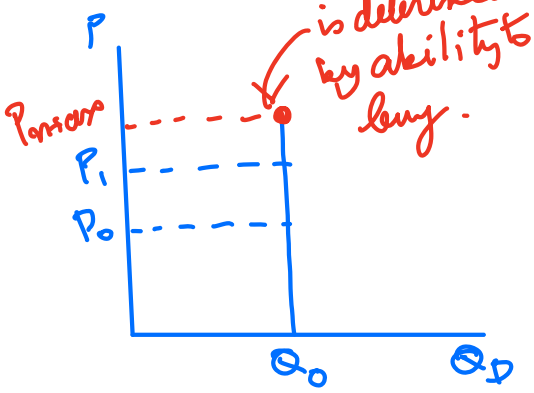



D is parallel to horizontal axis.
At $P_0$, the quantity demanded is infinite
ie. $Q_D$ can be as much as available in the market
- at $P_0$, the seller(s) can sell any quantity they can produce.

at price $P_1 < P_0$ – still want to buy "infinity"
But at price $P_2 > P_0$, quantity demanded is zero.

at price $P_0$ or $P_1$, the quantity demanded is still $Q_0$.

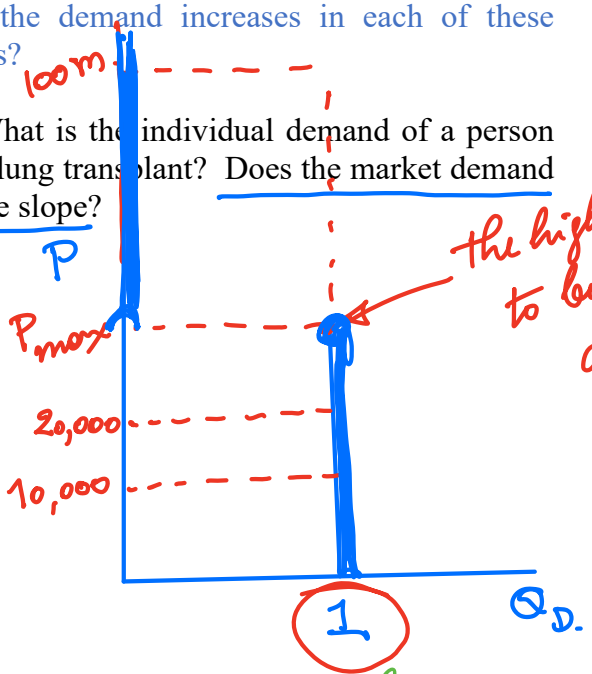
- Vertical Demand




$P_{max}$ is determined by ability to buy.

**HW** How the demand increases in each of these extreme cases?

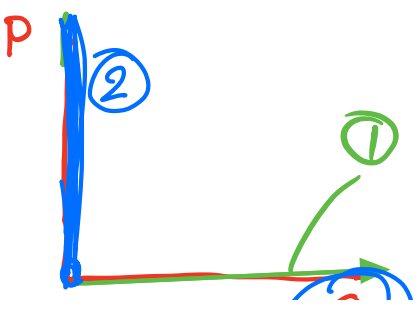
Example: What is the individual demand of a person who needs a lung transplant? Does the market demand has a negative slope?

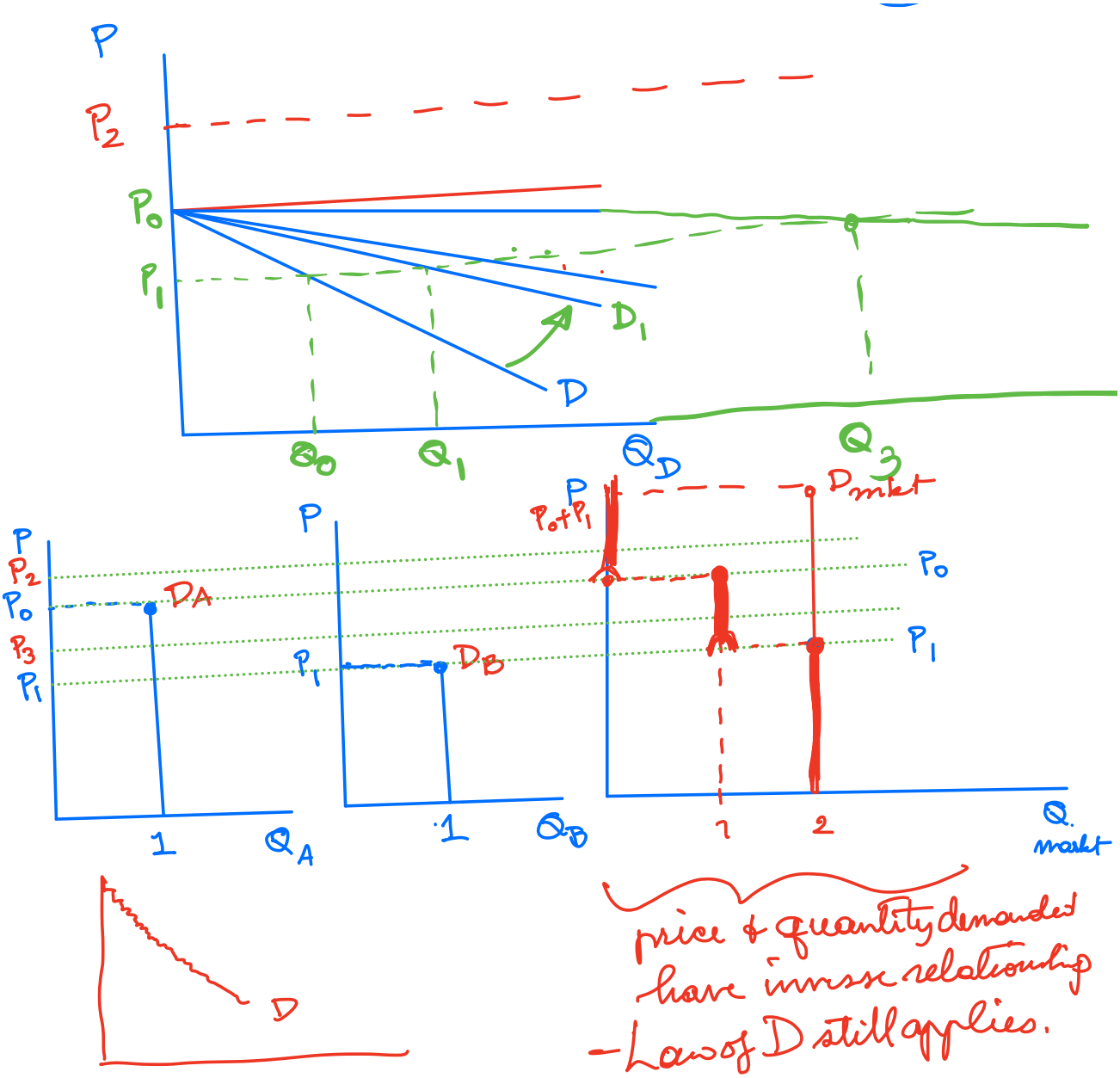



the highest price he is willing + able to buy is all his assets + his ability to borrow – which is always finite.

If price ≤ $P_{max}$, he buys $Q_D = 1$
If price > $P_{max}$, $Q_D = 0$.

Demand for lung transplant of a person whose lung was destroyed by Covid-19.









price & quantity demanded have inverse relationship
- Law of D still applies.

Question: If individual demands of consumers are all horizontal but at different prices, what will be the market demand?