Quantity Theory of Money

Quantity theory of money is the oldest theory of determination of value of money. It was propounded in 1566 by French economists Jean Bodin. It was further elaborated by many economists like Marshall, Pigou, Robertson etc. But the credit of this theory goes to Irving Fisher who presented Quantity theory of money in his book, "The purchasing power of money" in 1881.

According to the quantity theory of money there is a direct and proportionate relation between quantity of money and general price level and an inverse relation between quantity of money and value of money. In this regard the definition given by *S.W. Taussig* is worth and mentioning. According to him, "Double the quantity(supply) of money, the price will be twice as before and the value of money one half. Half the quantity(supply) of money, the price will be one as before and the value of money double".

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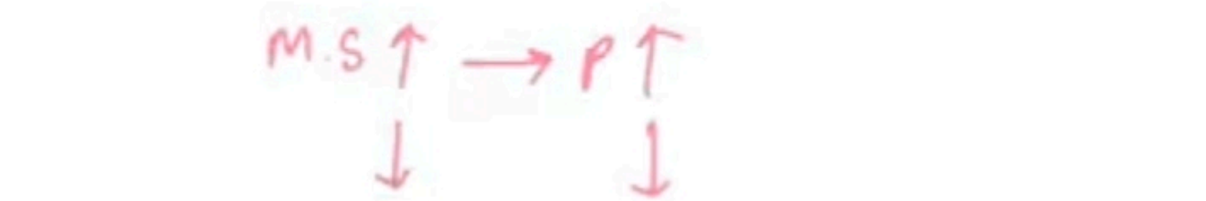
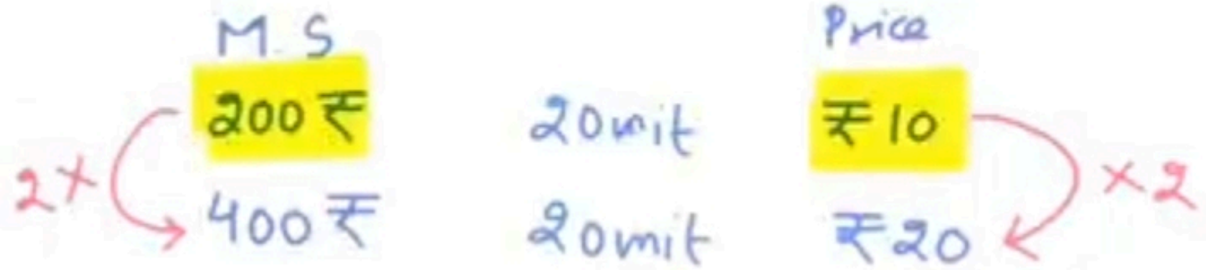
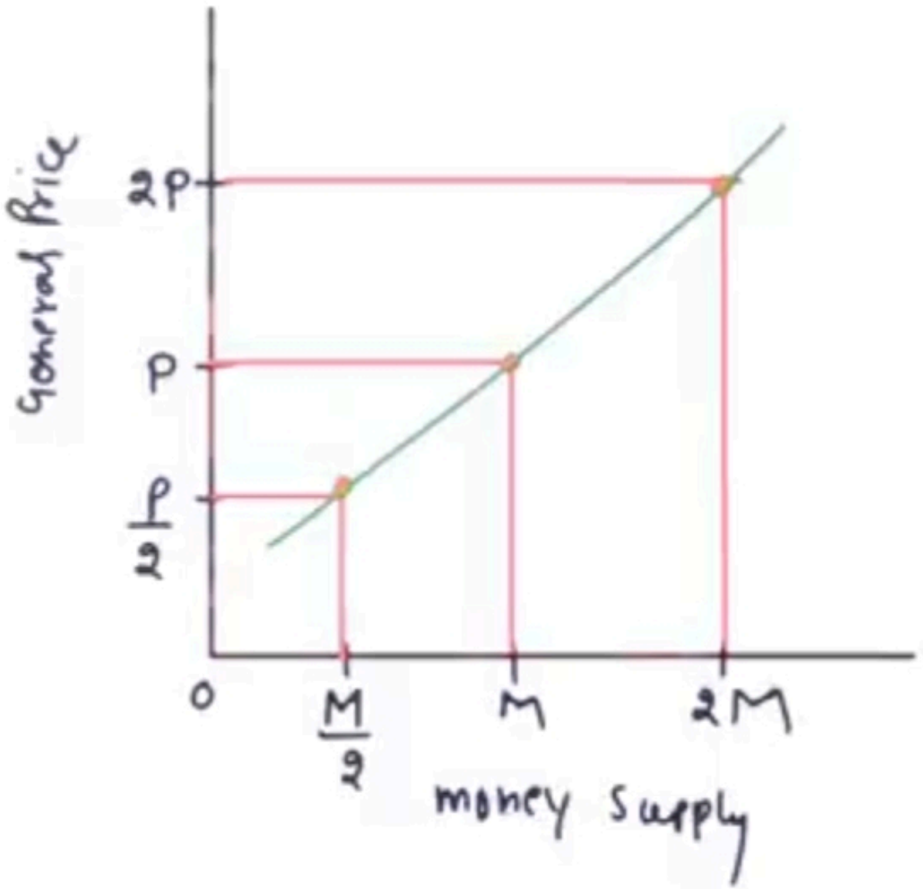
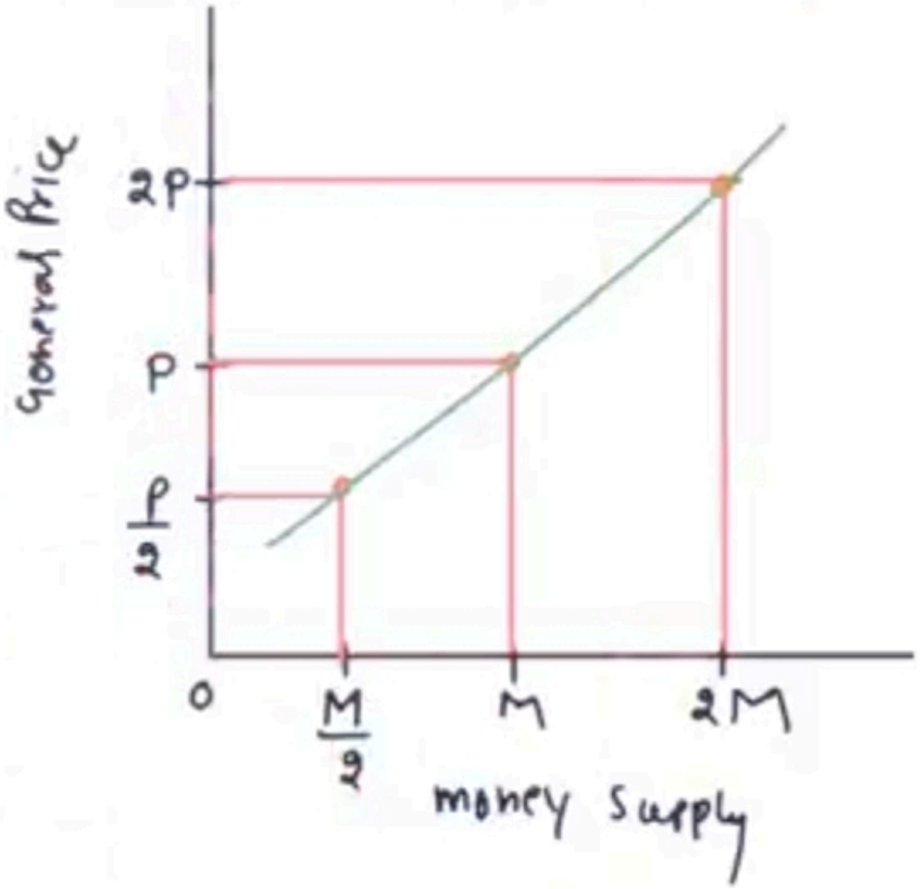

M.S ↑ → P ↑
↓ ↓


M.S
200 ₹
2x
400 ₹
20 unit
20 unit
Price
₹10
×2
₹20


General Price
2P
P
P/2
0
M/2
M
2M
money supply

Relⁿ b/w Price and M.S



MS ↑ → P ↑ → Value of money ↓

×2 ↓ ×2 ↓ ×$\frac{1}{2}$

	M.S		Price	
2×	200₹	20 unit	₹10	×2
	400₹	20 unit	₹20	

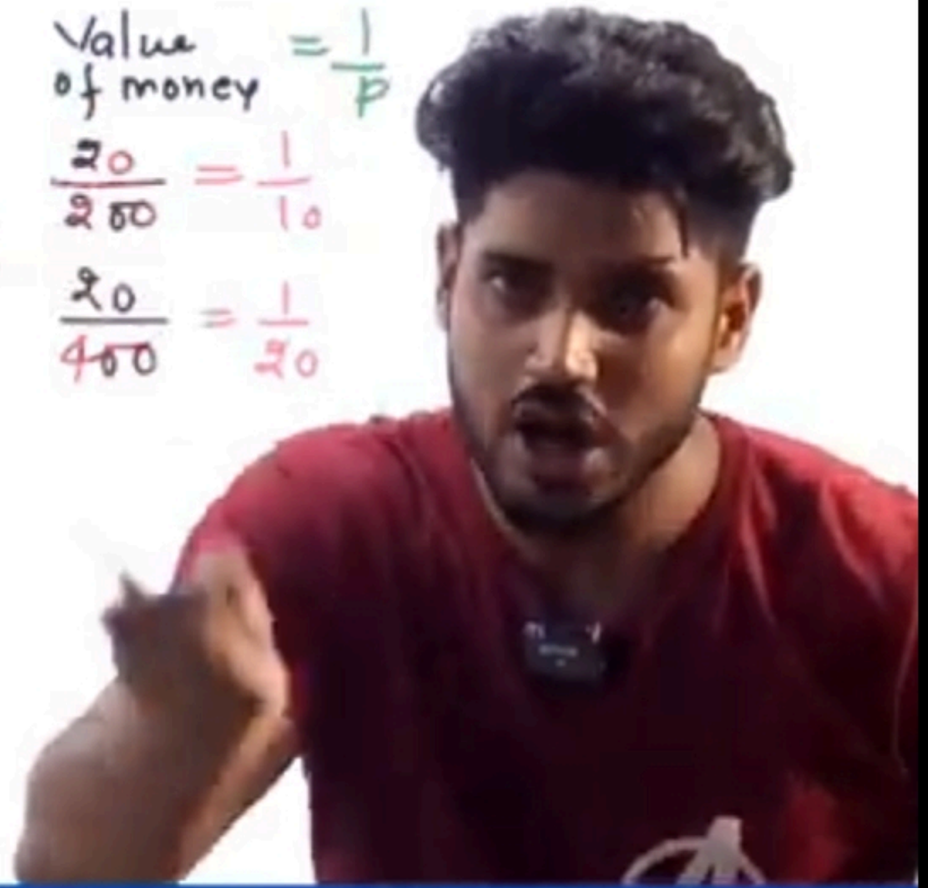
400₹ 20 unit

200₹ 10 unit

Value of money $= \frac{1}{P}$

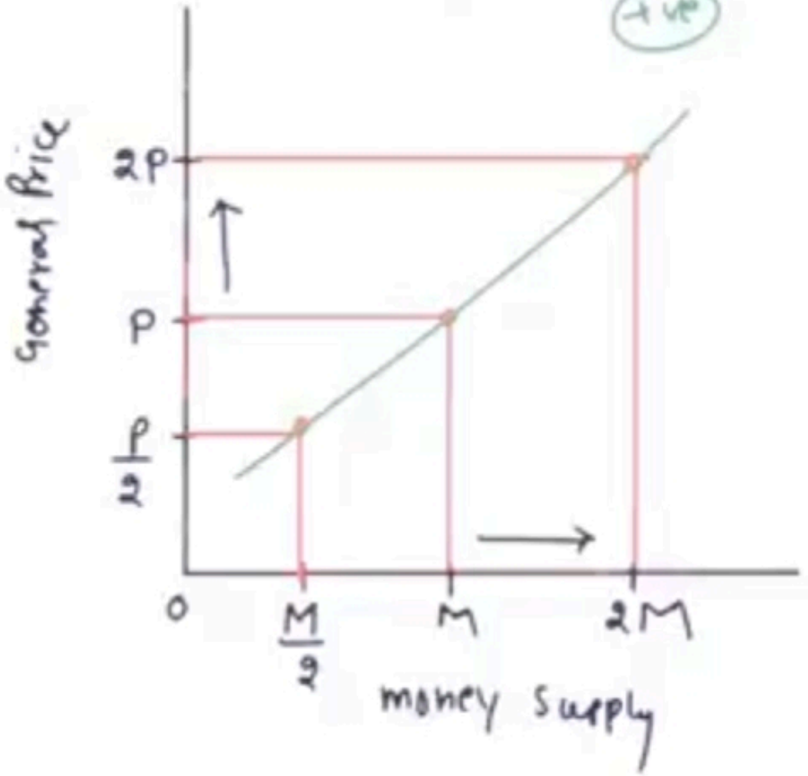
$\frac{20}{200} = \frac{1}{10}$

$\frac{20}{400} = \frac{1}{20}$



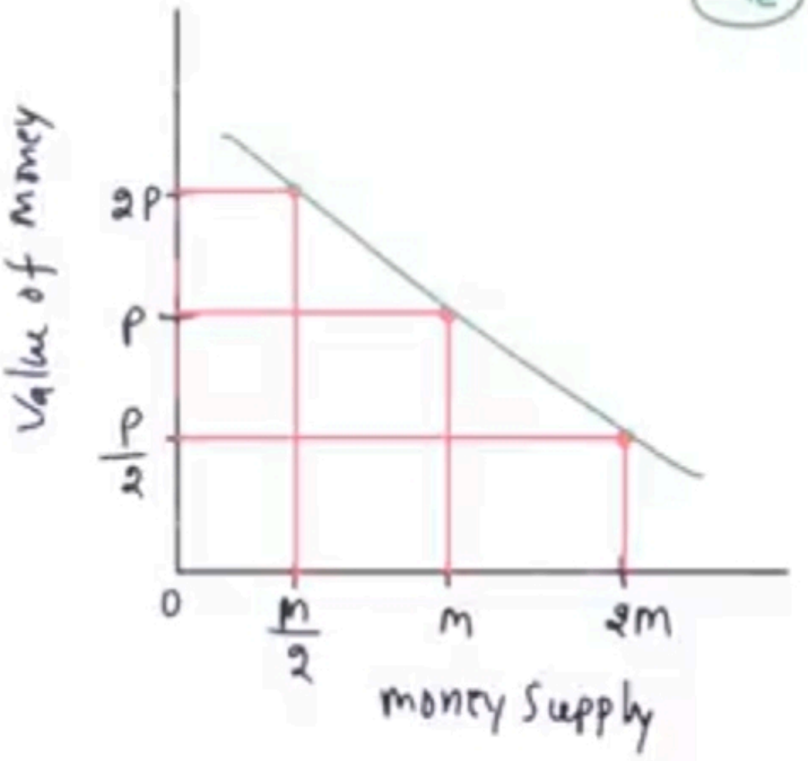
Reln b/w Price and M S

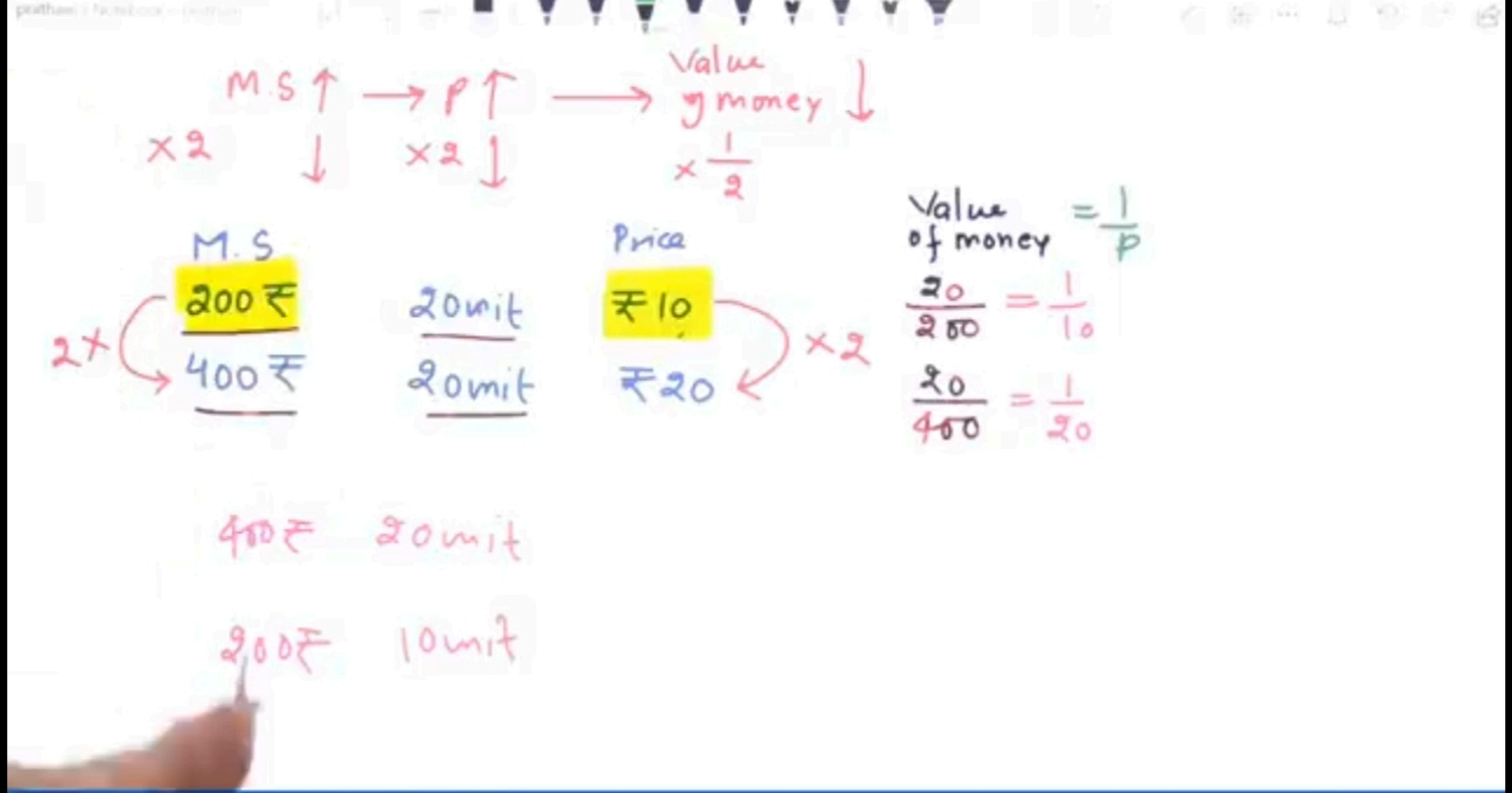
+ve



Reln b/w Value of money and M.S

-ve





be one as before and the value of money double".

The above definition given by Taussig reveals two main conclusion:

a) There is a direct proportional relationship between quantity(supply) of money and price level. Every increase in quantity of money will results a proportionate increase in price level.

b) There exists an inverse proportionate relation between the quantity of money and the value of money. Every increase in the quantity of money will results a proportionate decrease in the value of money.

Equation of Exchange (Irving fisher)

Money Supply = Money Demand

$MV = PT$

M = Qty of money

V = Velocity of money

MV = Money Supply

P = Price

T = Number of transaction

P.T = Money Demand

(Irving fisher)

Supply = Money Demand

= P.T

M = 100

V = 8

T = 400

$MV = P.T$

$100 \times 8 = P \times 400$

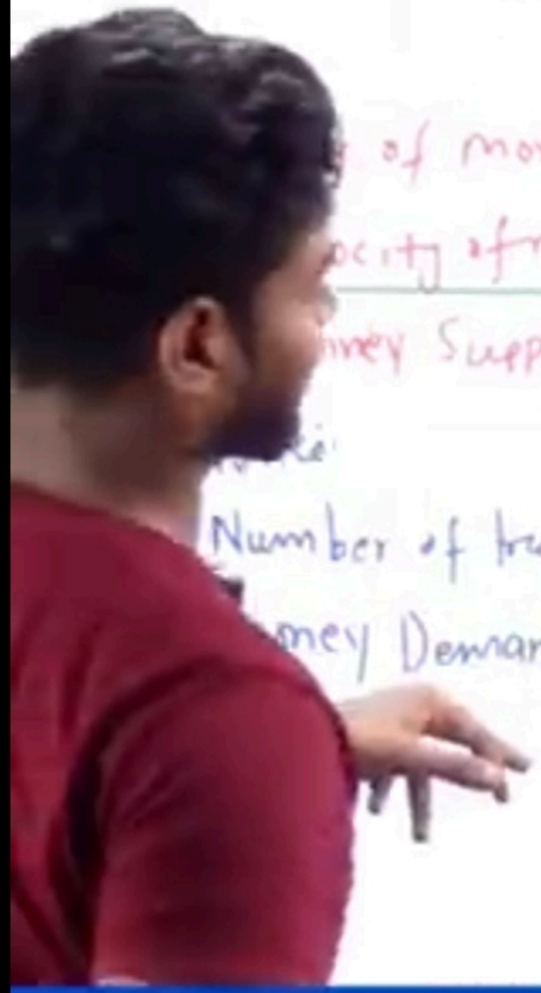
$\frac{800}{400} = P$

$P = 2₹$

$\frac{M.V}{T} = P$

Money Supply = Money Demand

M V = P T



... of money

...ocity of money [Const]

...ney Supply

...e

Number of transaction [Const]

...ney Demand

M = 100

V = 8

T = 400

M V = P T

100 × 8 = P × 400

800 / 400 = P

P = 2 ₹

M.V / T

if we double the qty of money

Qty of money

Ve… …ey [Const]

…um b… …on [Const]

mone…

M = 100

V = 8

T = 400

$M.V = P\,T$

$100 \times 8 = P \times 400$

$\frac{800}{400} = P$

$P = 2₹$

$\frac{M.V}{T} = P$

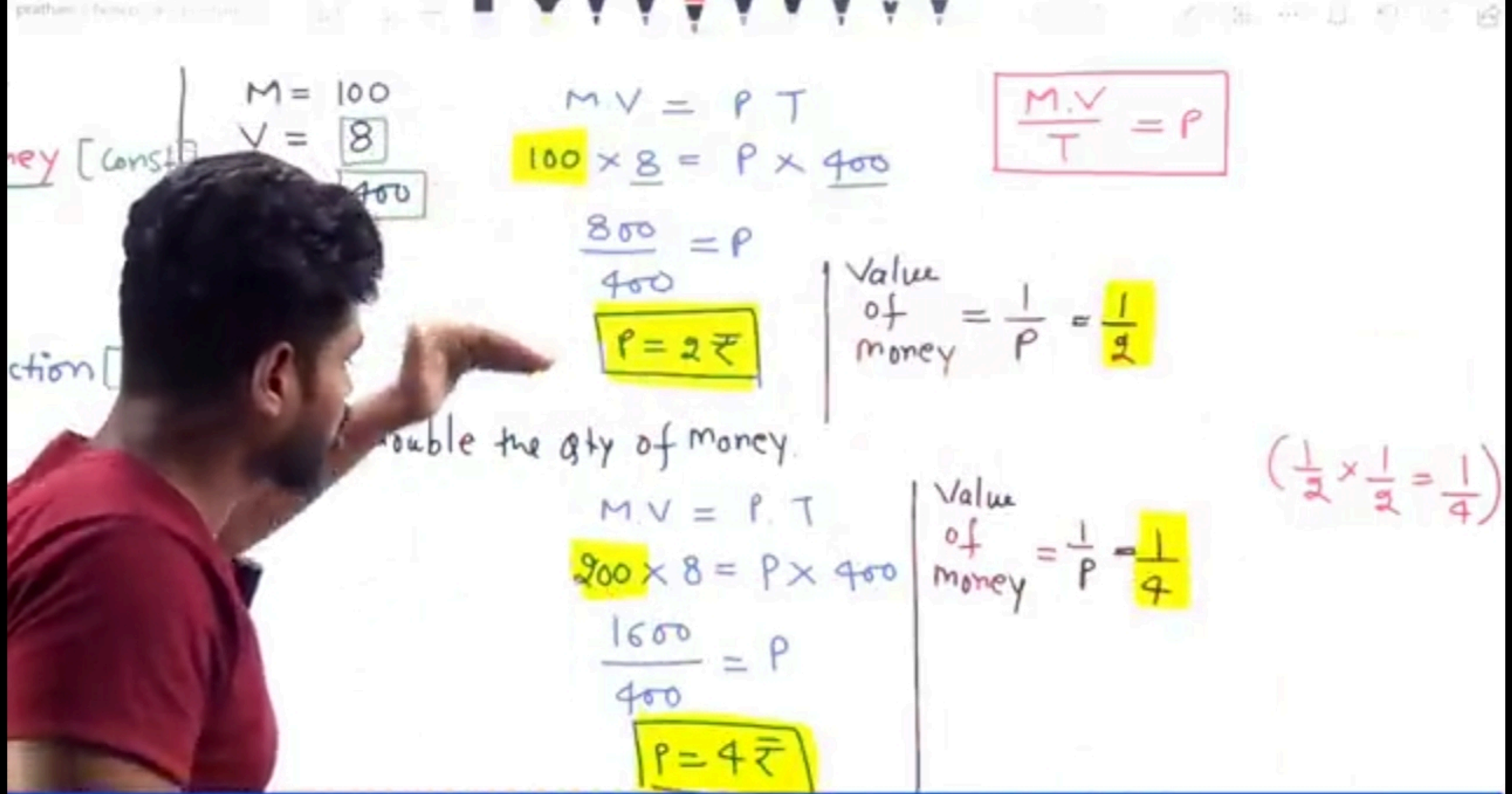
if we double the qty of money

$M.V = P\,T$

$200 \times 8 = P \times 400$

$\frac{1600}{400} = P$

$P = 4₹$



Equation of Exchange (Irving fisher)

Money Supply = Money Demand

$MV = PT$

M = Qty of money

V = Velocity of money [Const]

MV = Money Supply

P = Price

T = Number of transaction [Const]

PT = money Demand

M = 100

V = 8

T = 400

$MV = PT$

$100 \times 8 = P \times 400$

$\frac{800}{400} = P$

$P = 2₹$

$\frac{MV}{T} = P$

Value of money $= \frac{1}{P} = \frac{1}{2}$

if we double the qty of money

$MV = PT$

$200 \times 8 = P \times 400$

$\frac{1600}{400} = P$

Value of money $= \frac{1}{P} = \frac{1}{4}$

$(\frac{1}{2} \times$

New equation

Money Supply = Money Demand

[Cash money + Credit money] = Money Demand

$$M.V + M'V' = P.T$$

Money Supply = Money Demand

[Cash money + Credit money] = Money Demand

$$M.V + M'V' = P.T$$

$M = 100$
$V = 8$
$M' = 500$
$V' = 4$
$T = 400$

$$100 \times 8 + 500 \times 4 = P \times 400$$

$$\frac{800 + 2000}{400} = P$$

$$\frac{2800}{400} = P$$

$$P = 7₹$$

Money Supply = Money Demand

[Cash money + Credit money] = Money Demand

$$M.V + M'V' = P.T$$

$100 \times 8 + 500 \times 4 = P \times 400$

$$\frac{800 + 2000}{400} = P$$

$$\frac{2800}{400} = P$$

$P = 7₹$

Value of money $= \frac{1}{P} = \frac{1}{7}$

if we double the qty of money

Money Supply = Money Demand

[Cash money + Credit money] = Money Demand

$$+ M'V' = PT$$

$$\times 8 + 500 \times 4 = P \times 400$$

$$\frac{800 + 2000}{400} = P$$

$$\frac{2800}{400} = P$$

$P = 7₹$

Value of money $= \frac{1}{P} = \frac{1}{7}$

if we double the qty of money

$$200 \times 8 + 1000 \times 4 = P \times 400$$

$$\frac{1600 + 4000}{400} = P$$

$$\frac{5600}{400} = P$$

$P = 14₹$

Value of money $= \frac{1}{P} = \frac{1}{14}$

Money Supply = Money Demand

[Cash money + Credit money] = Money Demand

$$M.V + M'V' = P.T$$

$100 \times 8 + 500 \times 4 = P \times 400$

$$\frac{800 + 2000}{400} = P$$

$$\frac{2800}{400} = P$$

$P = 7₹$

Value of money $= \frac{1}{P} = \frac{1}{7}$

if we double the qty of money

$200 \times 8 + 1000 \times 4 = P \times 400$

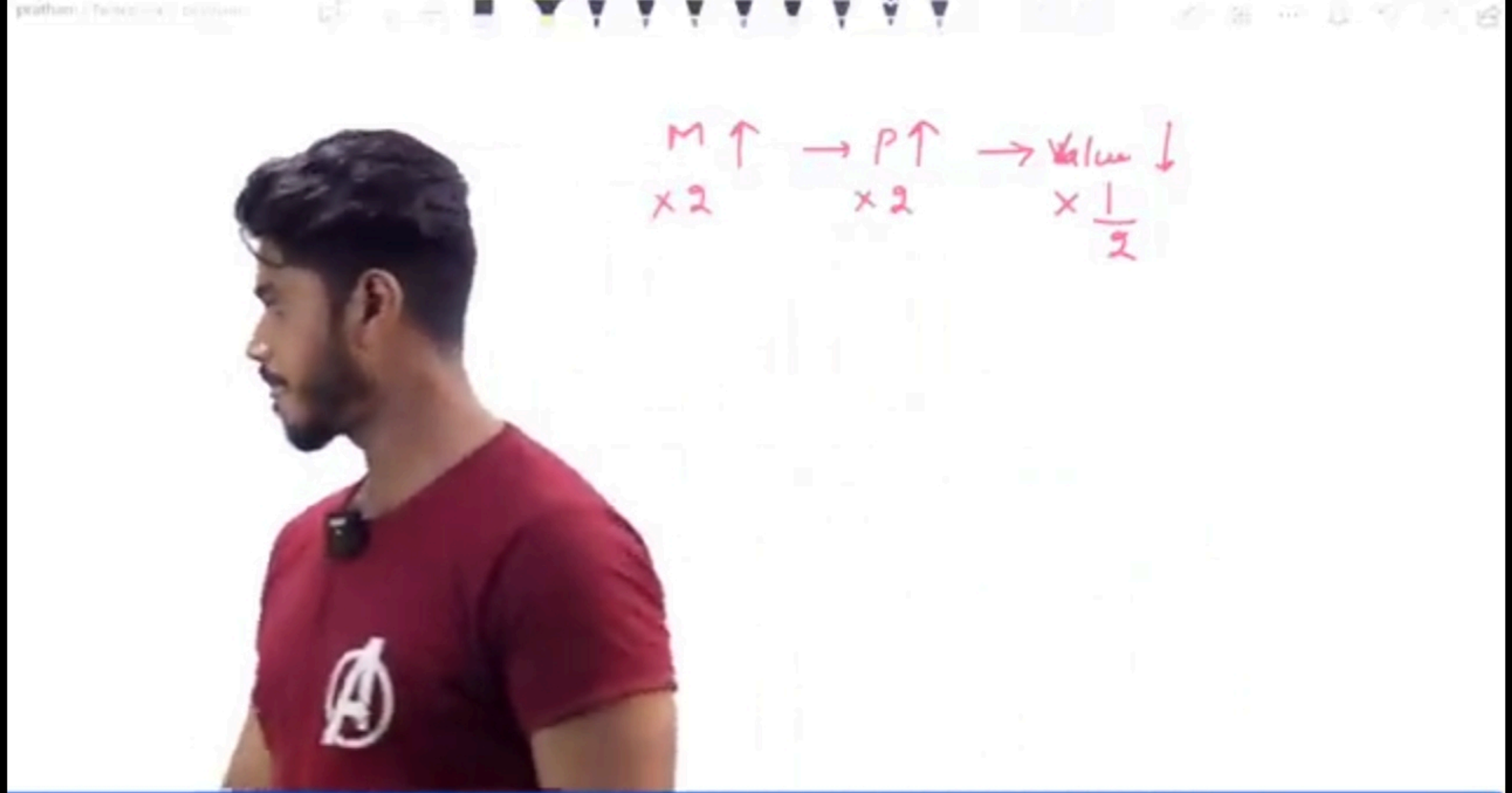
$$\frac{1600 + 4000}{400} = P$$

$$\frac{5600}{400} = P$$

$P = 14₹$

Value of money $= \frac{1}{P} = \frac{1}{14}$

M ↑ → P ↑ → Value ↓
×2 ×2 × 1/2



Assumptions of Quantity Theory of Money

1) Constant Velocity of Money (both Cash Money V and Credit Money V1)
2) Quantity of goods and services remains constant. Economy is working on full employment level.
3) Constant Number of Transactions
4) Constant Proportion between M (Cash Money) and M1 (Credit Money)

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100
×2
×4

500
×2
×4

Criticism or Limitation of Quantity Theory of Mo

1) Unrealistic Assumptions
2) Measurement of Variables (T, V, V1) in the equation is difficult
3) Price is affected by other factors.

   Price is affected not only by quantity of Money but also by other factors such as weather condition, rainfall, flood, natural calamities etc.

4) One sided Theory : This theory analyses the supply side of money whereas demand side is taken as unchanged.

5) Fails to explain trade cycles : It does not explain why in time of recession, price level does not go up with increase in the money supply. And In the time of boom price level does not fall with fall in money supply.

6) Proportionate change in the money and price level is doubtful.

7) Store of Value of Money is ignored. People do not spend whole of money on the purchase of goods and services, but keep a part of it for future.