

YAKEEN NEET 2.0

2026

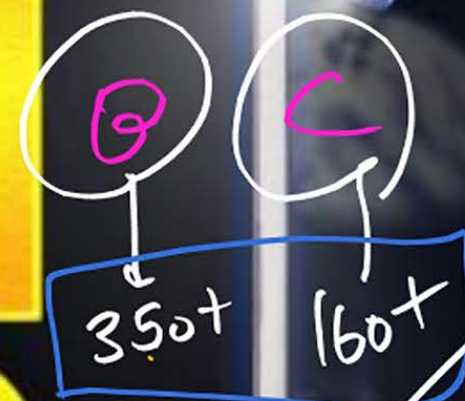
Basic Maths and Calculus (Mathematical Tools)

Physics

Lecture - 6

By- Manish Raj (MR Sir)

~~A/P → G.P~~



350
160

510+

top 40%
95% of
cutoff

20 + 20 + 5

PYQ
Basic

medium
medium

Club level up
ask you
no-bol.

5th years cutoff

330
155
+ 485

100

585

Top 100
cut



Topics to be covered

1

Co-ordinate Geometry

2

→ Straight line graph

3

4



Recap of previous lecture

1

A/P series \rightarrow

$$d = n^{\text{th}} \text{ term} - (n-1)^{\text{th}} \text{ term}$$

2

$$\text{Value of } n^{\text{th}} \text{ term} = a + (n-1)d$$

3

$$\text{Sum of } n \text{ terms} = \frac{n}{2} (1^{\text{st}} \text{ term} + n^{\text{th}} \text{ term})$$

4

G.P series

$$= \frac{n}{2} (2a + (n-1)d)$$

$$C.R = \frac{n^{\text{th}} \text{ term}}{(n-1)^{\text{th}} \text{ term}} \checkmark$$

$$\boxed{\text{Sum of infinite} = \frac{a}{1-C.R}} \text{ for } C.R < 1$$



Co-ordinate Geometry

Graph \rightarrow always b/w two physical quantity & 3rd physical quantity in given formula taken as constant.

Ex \Rightarrow

$$S = vt$$

$$a = v/t$$

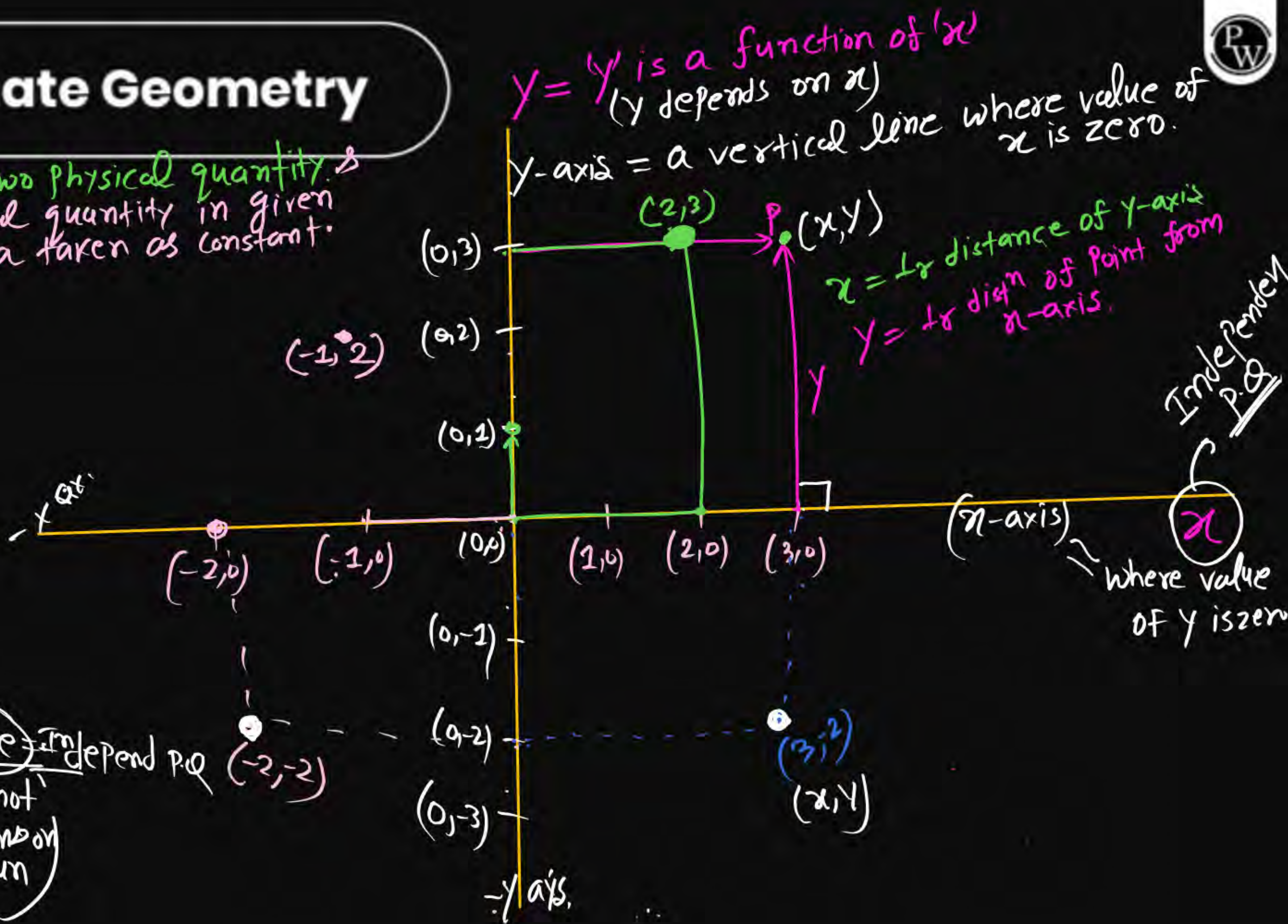
$$K.E = \frac{1}{2}mv^2$$

$$p = mv$$

$$T = \frac{1}{f}$$

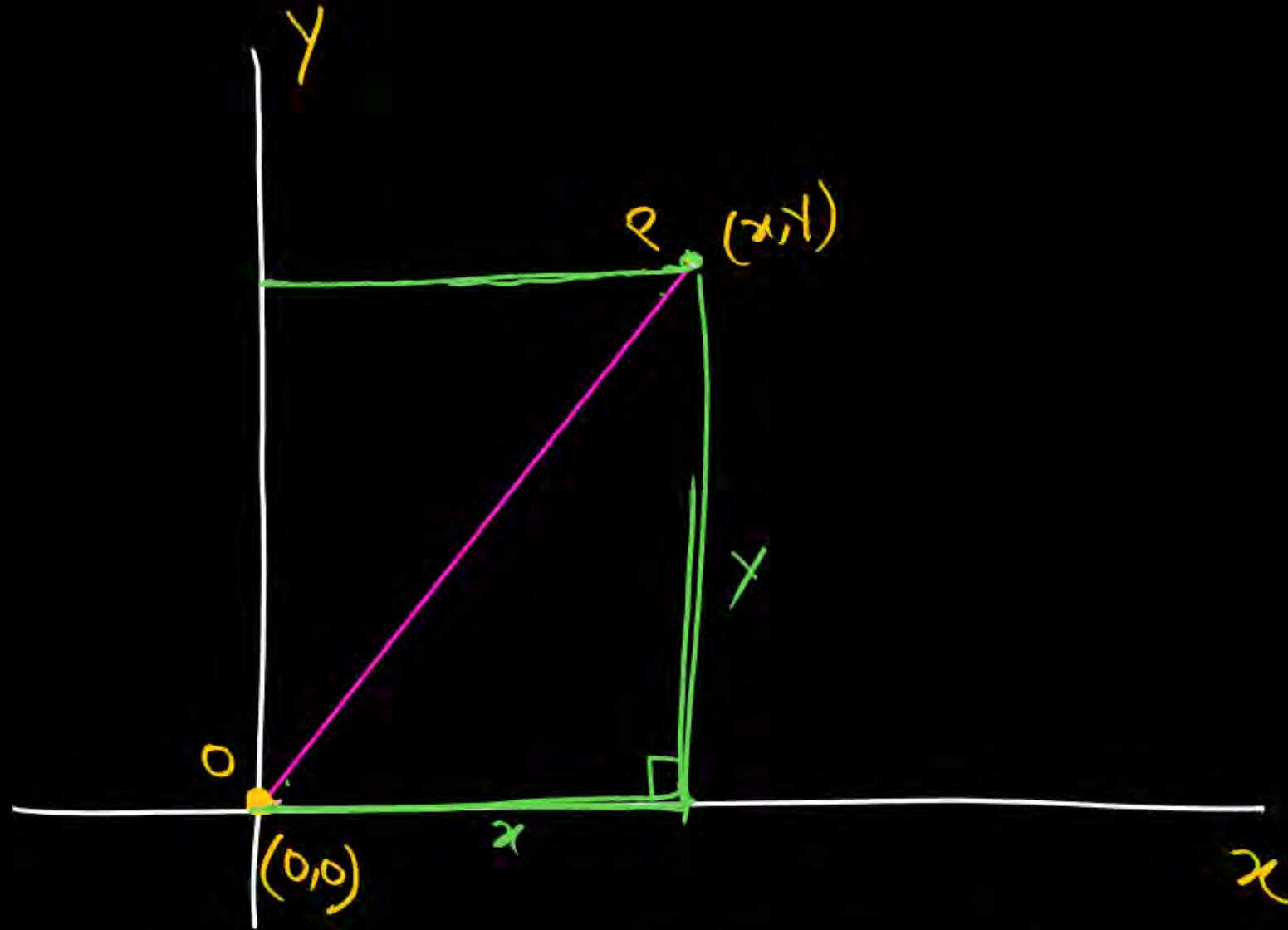
Run (depend on) over Velocity

time \rightarrow depend p.q
over (does not depend on run)

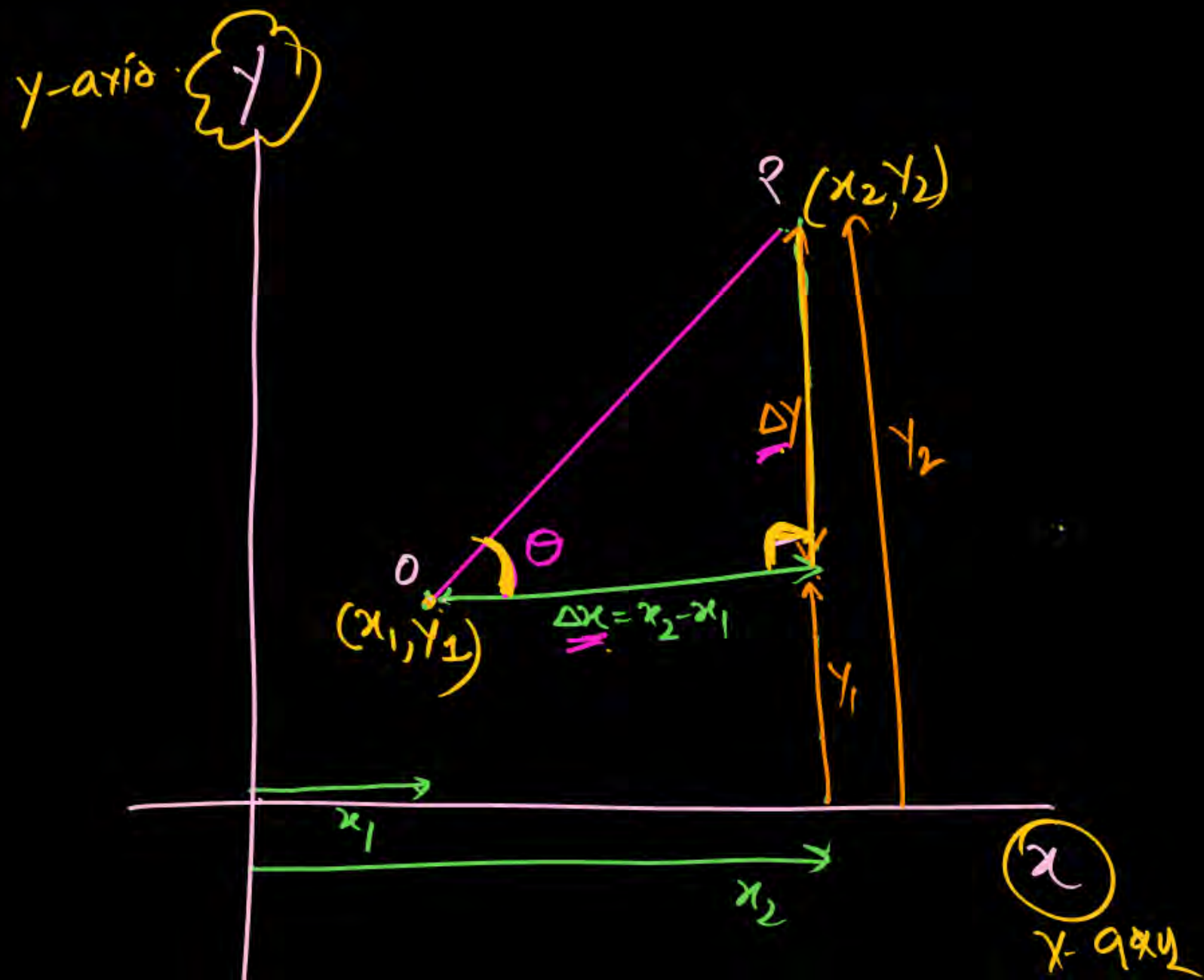


Distance formula

find length of OP ??



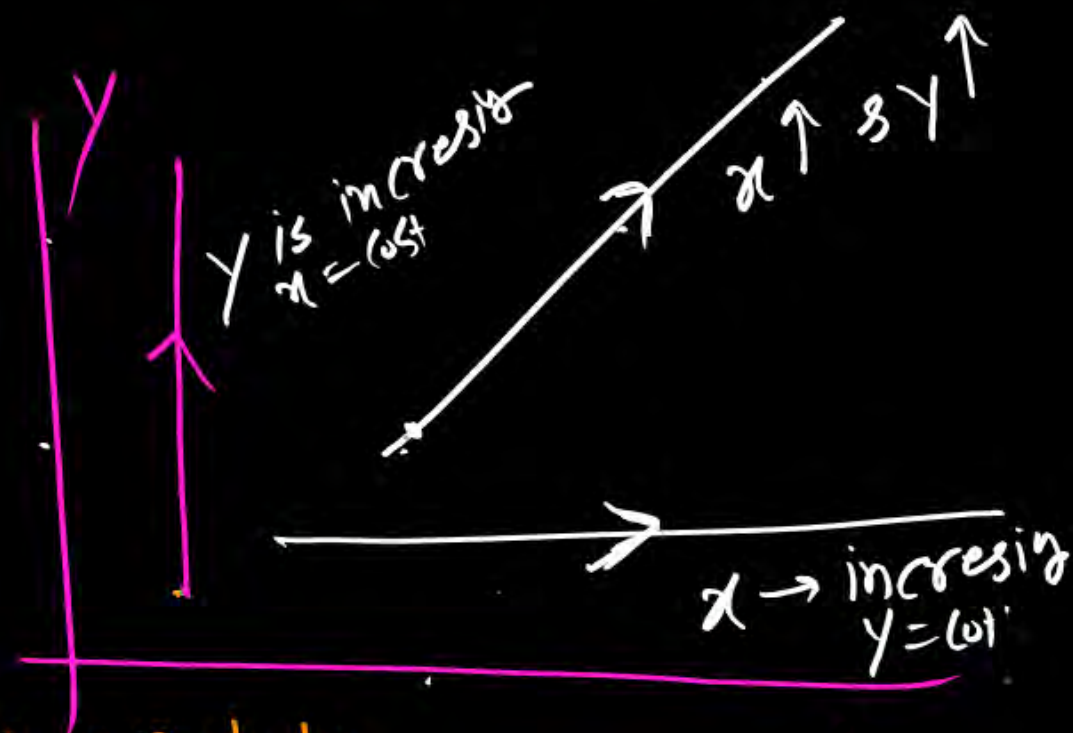
$$OP = \sqrt{x^2 + y^2} \quad \checkmark$$



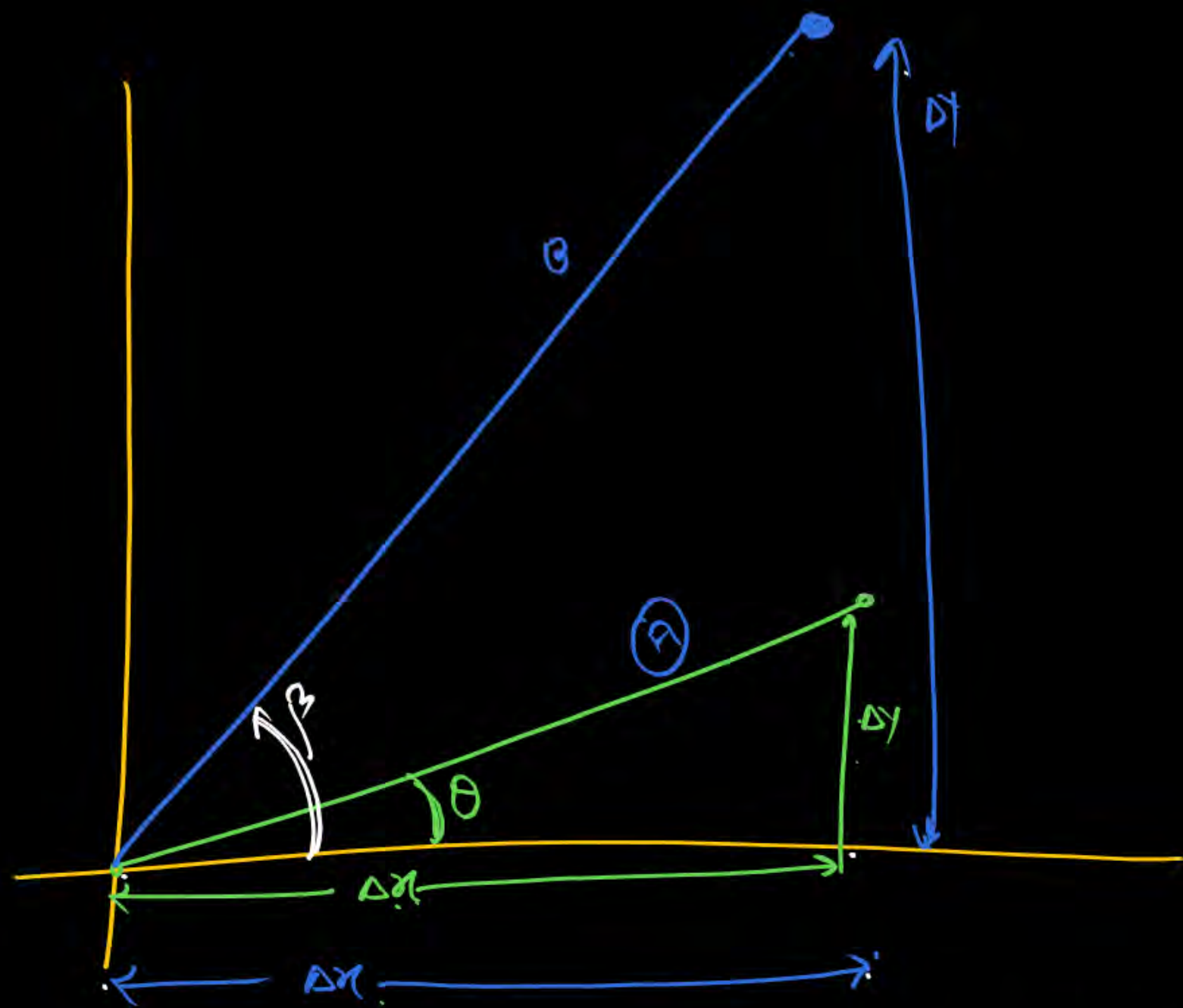
$$m = \text{slope} = \tan \theta = \frac{\Delta y}{\Delta x}$$

$$OP = \sqrt{(\Delta x)^2 + (\Delta y)^2}$$

$$OP = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

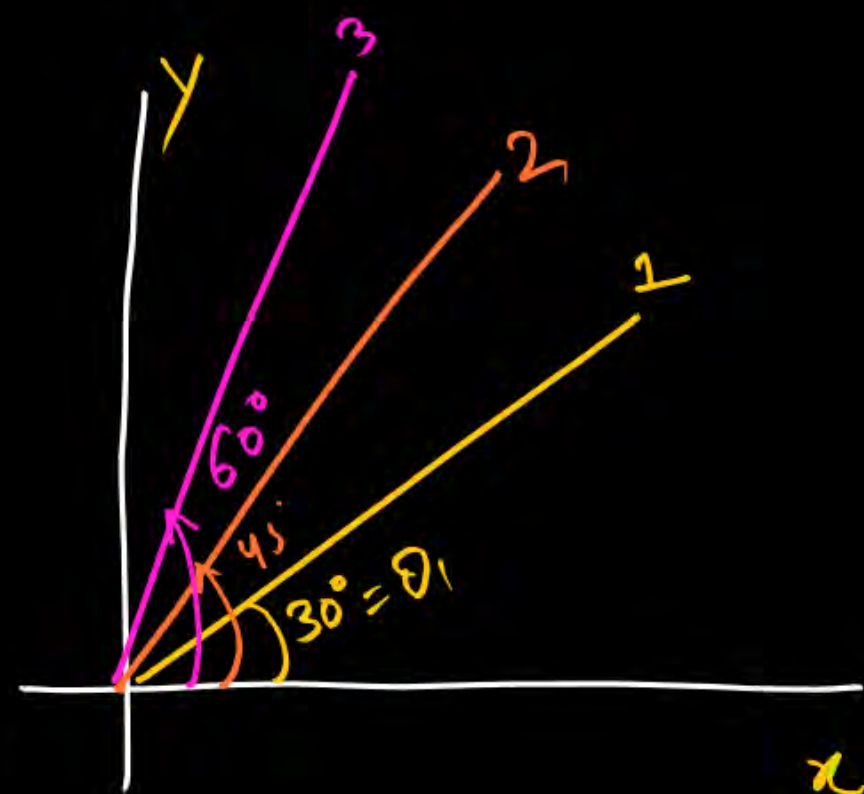


Change in y with respect to
 change in $x = \frac{\Delta y}{\Delta x} = \tan \theta = \text{slope} = m$



$$m_1 = \tan \theta = \frac{\Delta y}{\Delta x}$$

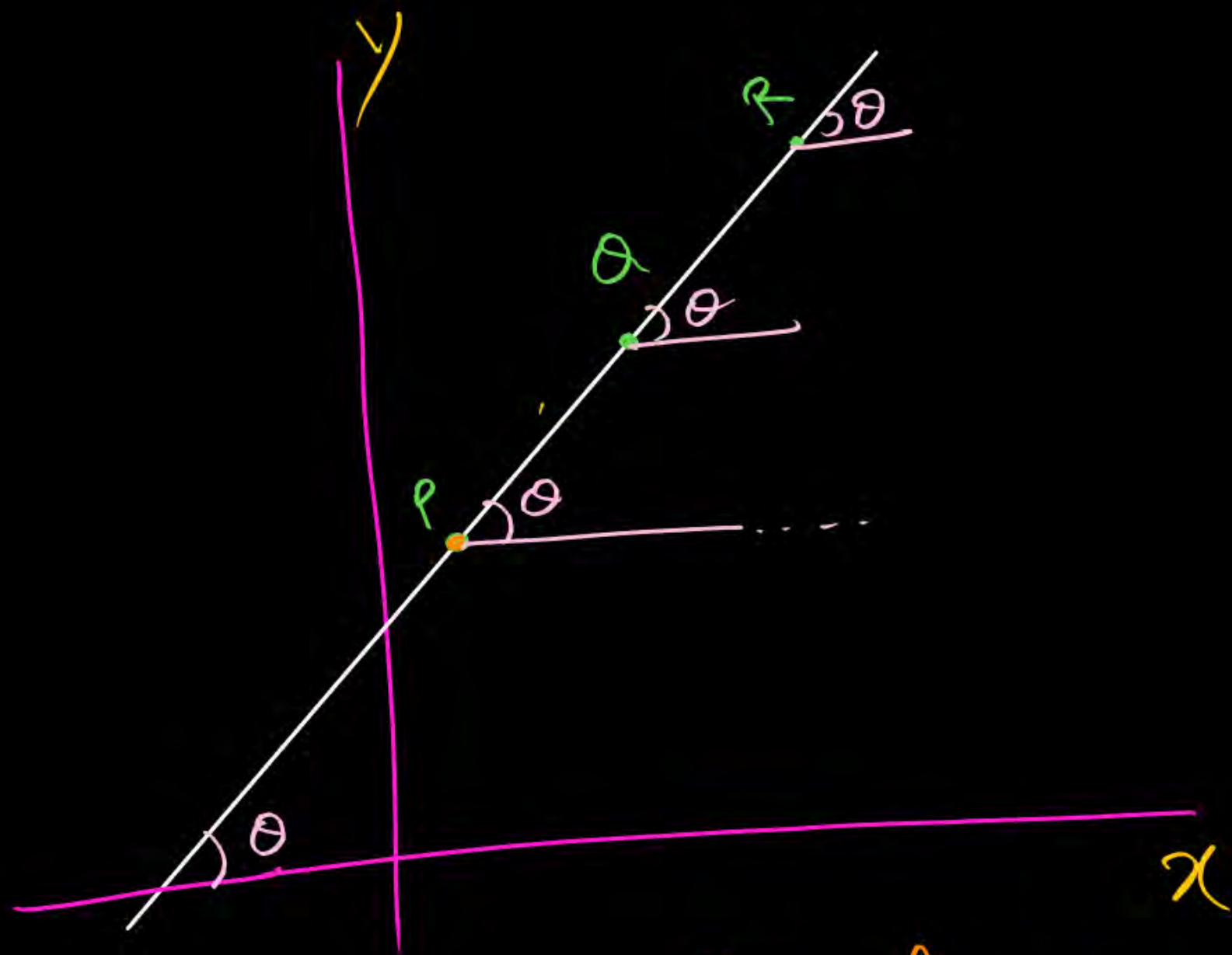
$$m_2 = \tan \beta = \frac{\Delta y}{\Delta x}$$



$$m_1 = \tan \theta_1 = \tan 30^\circ = \frac{1}{\sqrt{3}}$$

$$m_2 = \tan 45^\circ = 1$$

$$m_3 = \tan 60^\circ = \sqrt{3}$$



Angle made by straight line with x -axis is called slope ??

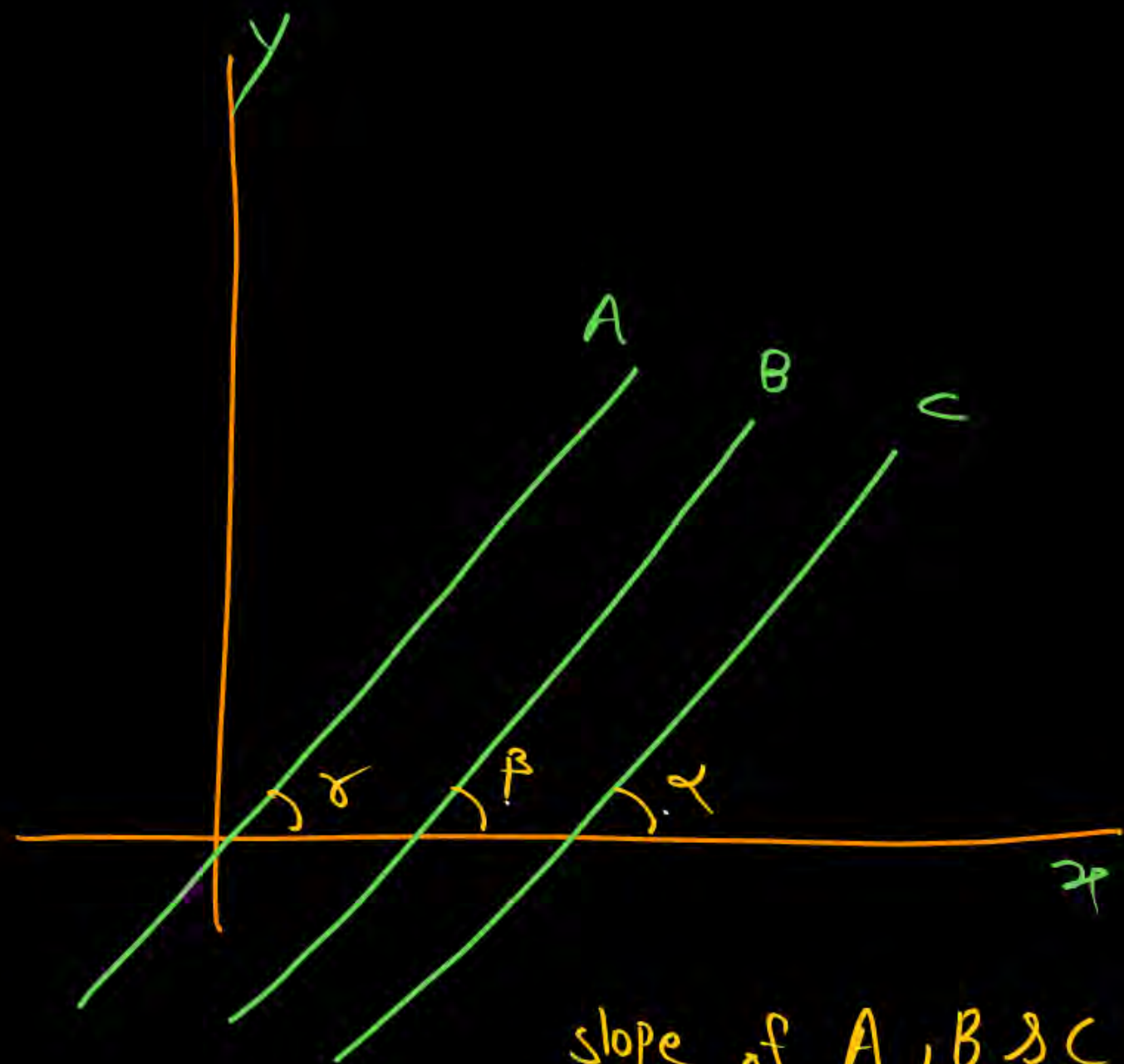
☒ (a) Yes

☒ (b) No

$$\text{slope}(m) = \tan \theta$$

Slope at P, Q, R is same.

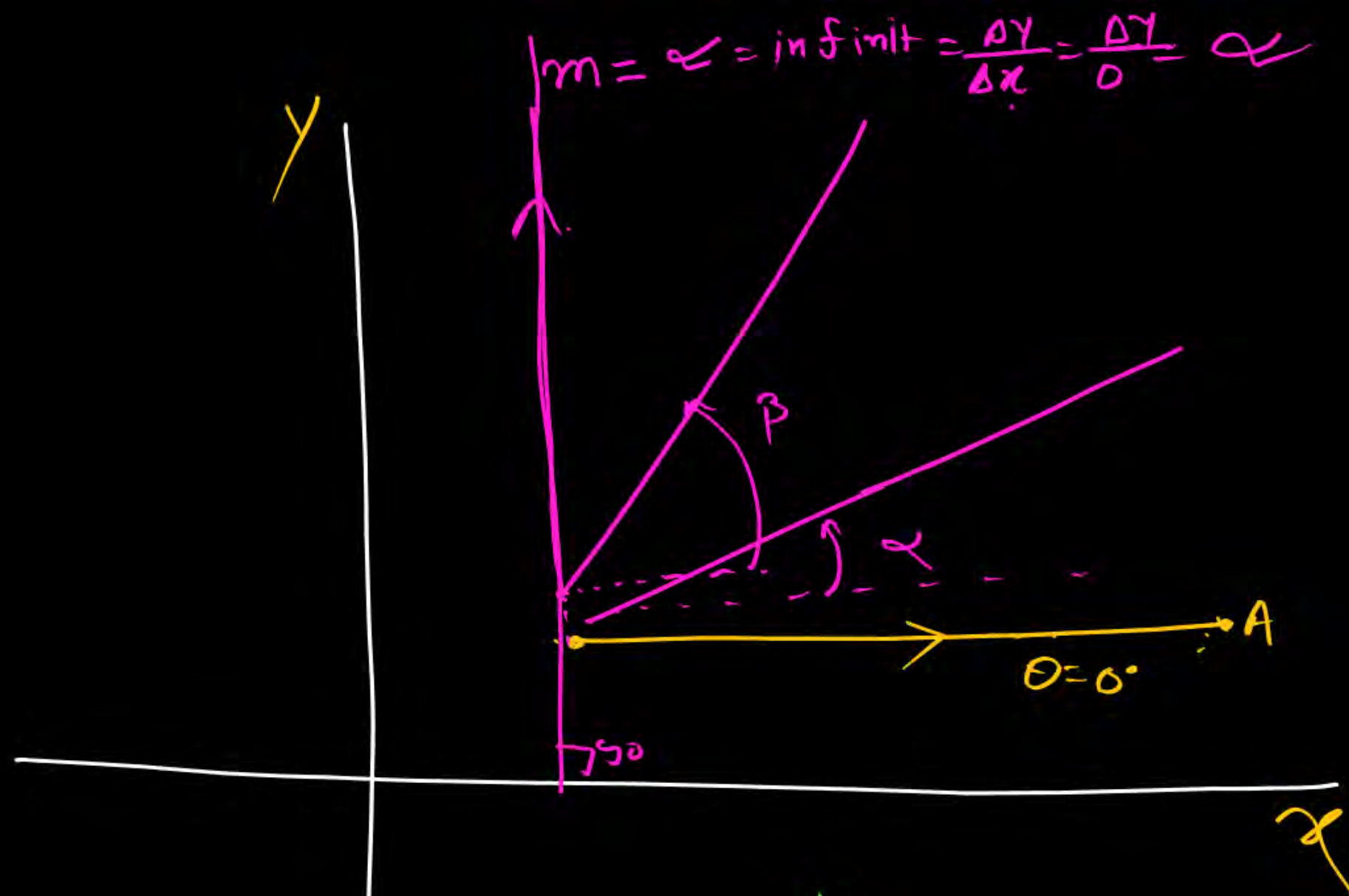
Slope of straight line is same at all points.



Slope of Parallel lines
are same.

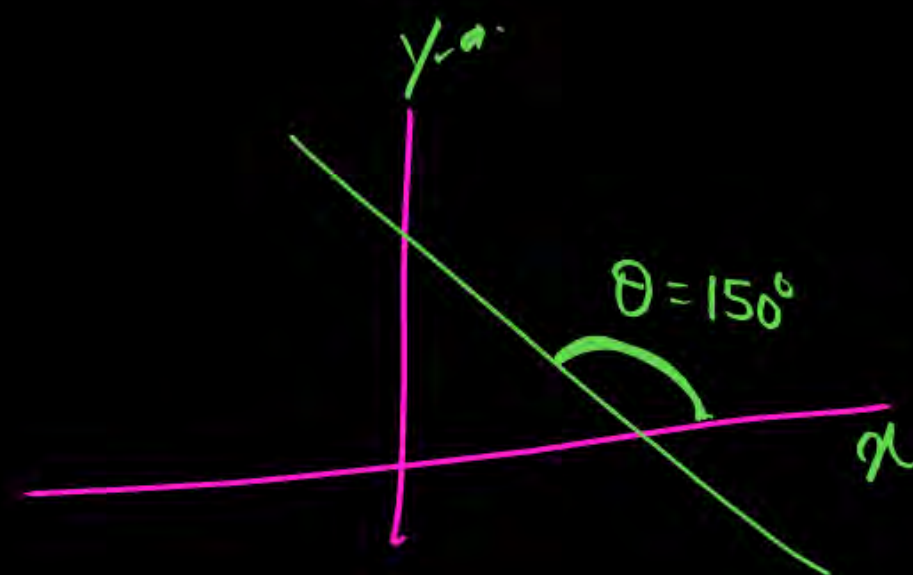
slope of A, B & C are same ✓

$\alpha = \beta = \gamma \Rightarrow$ for Parallel



$$(\text{Slope})_A = \tan 0 = 0$$

$$\boxed{\text{Slope} = \frac{\Delta y}{\Delta x} = 0}$$



$$\tan 150 = -\frac{1}{\sqrt{3}} = m.$$

θ = Angle b/w straight line & +ve x-axis

θ = Acute $m = +ve$
 $\theta < 90$

$\theta > 90$
obtuse
 $m = -ve$

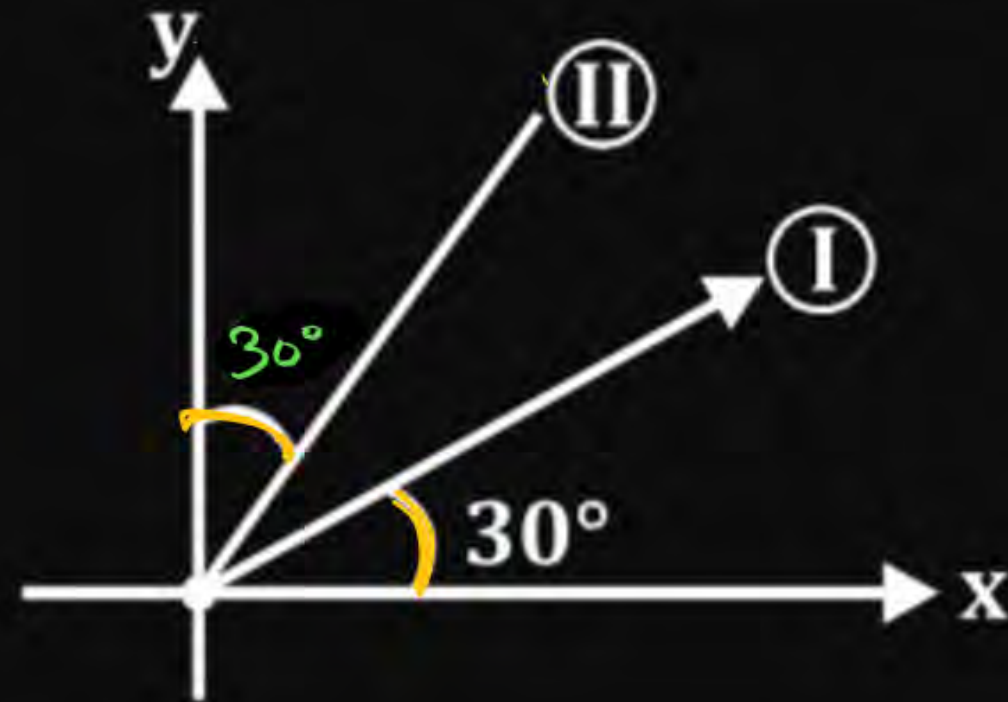
$\theta = 0^\circ$
 $m = 0$

$\theta = 90$
 $m = \text{infinity}$

Question

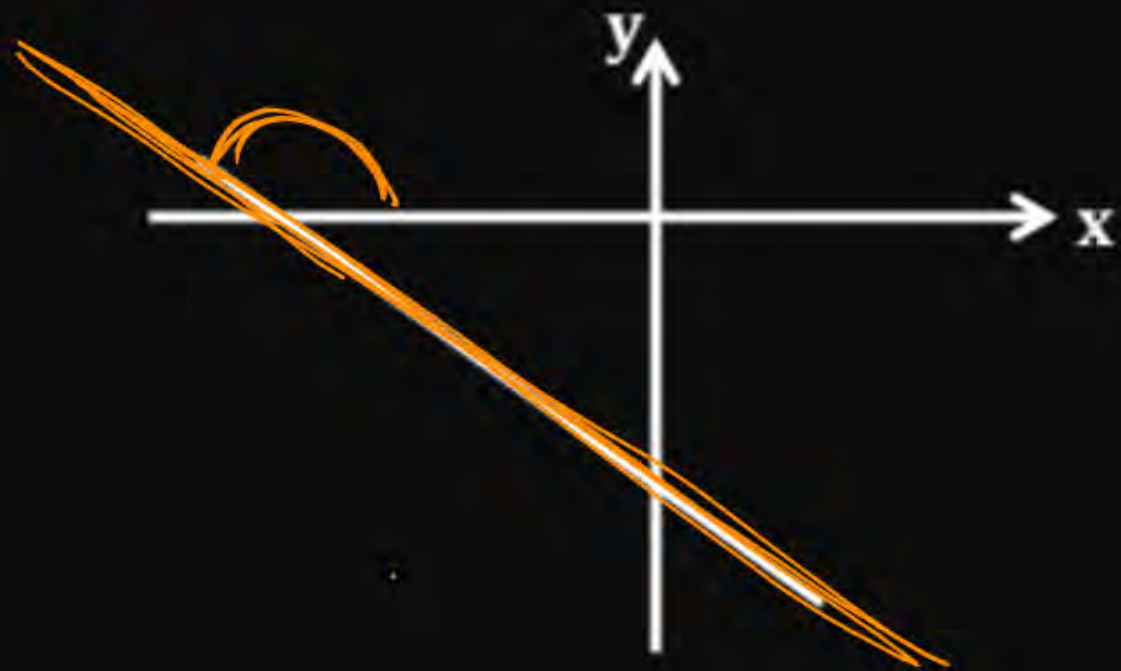
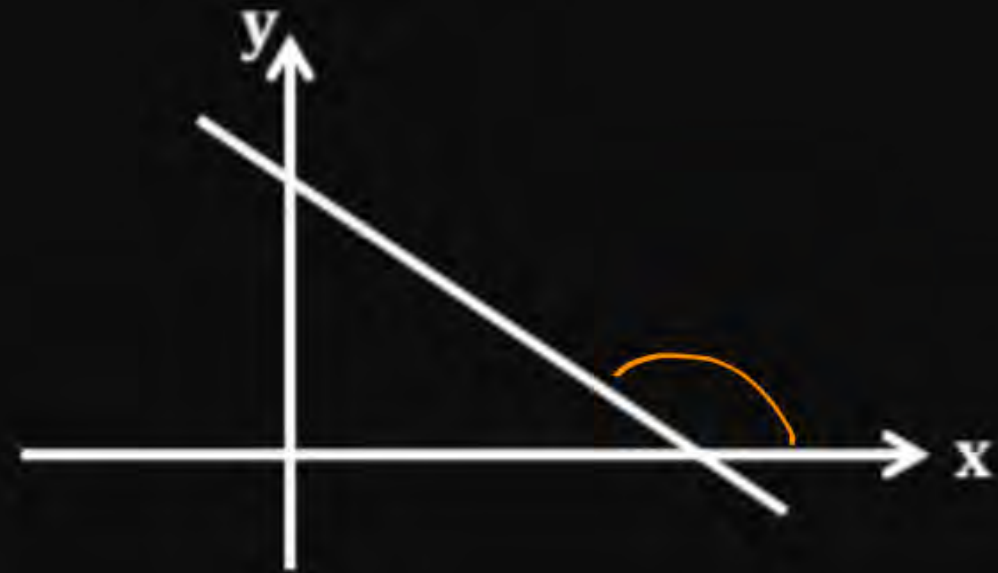
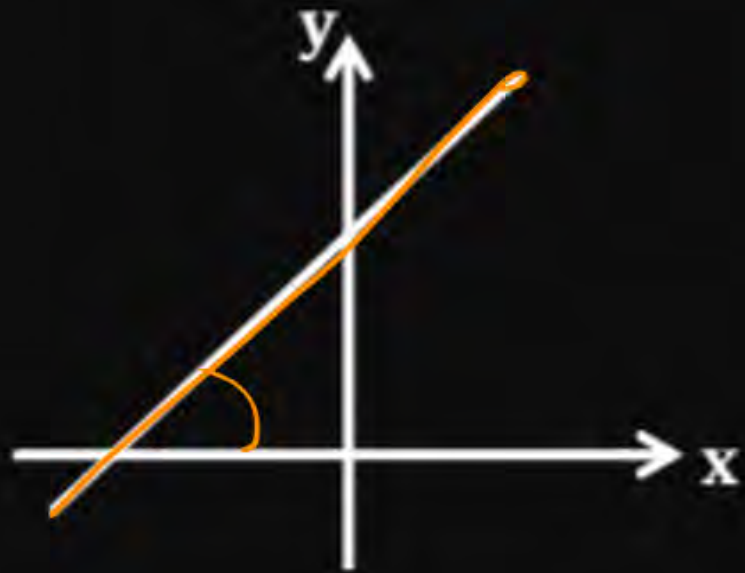
Find $\frac{(\text{slope})_{\text{I}}}{(\text{slope})_{\text{II}}} =$

4/3



Question

Comment on slope



THANK
YOU