Chapter 11. STRAIGHT LINES

General direction for the students :-Whatever be the notes provided , everything must be copied in the Maths Copy and then do the Home work in the same Copy.

1. INTERCEPT FORM of a Line

$\frac{x}{a} + \frac{y}{b} = 1$, **where a & b are the intercept made by the line on X-axis and Y-axis respectively.**

2. NORMAL (or PERPENDICULAR) FORM of a Line

$xcos\alpha + ysin\alpha = P$, Where P is the perpendicular distance of the line from the origin and α is the angle made by the perpendicular from the positive direction of the X-axis.

3. SYMMETRICAL (or DISTANCE) FORM of a Line

$\frac{x - x_1}{cos\theta} = \frac{y - y_1}{sin\theta} = r$, **Where** (x_1 , y_1) **is a point on the line , θ is the angle made by the line with the positive direction of the X-axis and r is the distance of any point (x, y) from the given point.**

- **From above , $x = x_1 + rcos\theta$, $y = y_1 + rsin\theta$ are known as PARAMETRIC FORM of a line.**

*(**For the diagram and explanation of above three forms refer the video class)*

Exercise 11.6

Q12. Given P= 5 , $\alpha = 30$

∴ the equation is $xcos30 + ysin30 = 5$

$\Rightarrow \sqrt{3}x + y = 10.$ ans

Q15. Required equation $\frac{x - -2}{cos45} = \frac{y - 1}{sin45} = r$

$\Rightarrow \frac{x + 2}{1/\sqrt{2}} = \frac{y - 1}{1/\sqrt{2}} = r$. ans

Home Work : Rest of the questions from the exercise.