

CLASS XI MATHS ASSIGNMENT Continuation....

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.

EXERCISE 11.7

22. ii) slope $m_1 = -1/2$, slope $m_2 = -3$

$$\begin{aligned}\tan\phi &= \left| \frac{\frac{-1}{2} - (-3)}{1 + \frac{-1}{2} \times (-3)} \right| \\ &= \left| \frac{5/2}{5/2} \right| = 1 \quad \Rightarrow \phi = \pi/4\end{aligned}$$

33 i) slope of the given line $= 1/3$

Slope of the perpendicular line $= -3$

Equation of the line through the point $(1, 2)$ is

$$\begin{aligned}y - 2 &= -3(x - 1) \\ \Rightarrow y + 3x &= 5 \text{ ans.}\end{aligned}$$

40. Let $l_1 \equiv 3x - y + 3 = 0$, $l_2 \equiv 3x + 4y + 3 = 0$, $l_3 \equiv x + 3y + 11 = 0$

Slope of $l_1 = 3$, slope of $l_2 = -\frac{3}{4}$, slope of $l_3 = -1/3$

$\Rightarrow l_1$ and l_3 are perpendicular to each other.

\Rightarrow triangle is right angled triangle.

\Rightarrow circumcentre is in the mid- point of hypotenuse.

Point of intersection of l_1 and l_2

$$-5y = 0 \quad \Rightarrow y = 0 \quad \Rightarrow x = -1$$

Point of intersection of l_3 and l_2

$$-5y = 30 \quad \Rightarrow y = -6 \quad \Rightarrow x = 7$$

\Rightarrow circumcentre $\left(\frac{7-1}{2}, \frac{0-6}{2}\right) \Rightarrow (3, -3)$

Home work : Remaining questions from 22 to 40.