

Straight Lines
Question paper –module 3

1. Reduce the equation $3x - 2y + 4 = 0$ to intercept form. Hence, find the length of the segment intercepted between the axes.
2. One side of a rectangle lies along the line $4x + 7y + 5 = 0$. Two of its vertices are $(-3,1)$ and $(1,1)$. Find the equation of the other three sides.
3. Reduce the following equations in the normal form
(i) $\sqrt{3}x + y + 2 = 0$ (ii) $x - \sqrt{3}y + 8 = 0$.
4. Find the angle between the lines $y = (2 - \sqrt{3})(x + 5)$ and $y = (2 + \sqrt{3})(x - 7)$.
5. Find the equation of one of the sides of an isosceles right angled triangle whose hypotenuse is given by $3x + 4y = 4$ and the opposite vertex of the hypotenuse is $(2,2)$.
6. If one diagonal of a square is along the line $8x - 15y = 0$ and one of its vertex is at $(1,2)$, then find the equations of the sides of the square passing this vertex.
7. In what ratio is the line segment joining $(-1,1)$ and $(5,7)$ divided by the line $x + y = 4$?
8. Show that the perpendicular drawn from the point $A(4,1)$ on the line joining the points $B(6,5)$ and $C(2,-1)$ divides the line segment BC internally in the ratio $8:5$.
9. Find the equation of the straight line passing through the point of intersection of the lines $2x + y = 5$ and $x + 3y + 8 = 0$ and parallel to the line $3x + 4y = 7$.
10. A triangle is formed by the lines $x + y - 6 = 0$, $3y - x + 2 = 0$ and $3y = 5x + 2$, Find the co-ordinates of its orthocentre.