

Topic :- STRAIGHT LINES

- The distance between the lines $4x + 3y = 11$ and $8x + 6y = 15$, is
a) $7/2$ b) 4 c) $7/10$ d) None of these
- Given the four lines with equations $x + 2y = 3$, $3x + 4y = 7$, $2x + 3y = 4$ and $4x + 5y = 6$, then these lines are
a) Concurrent b) Perpendicular
c) The sides of a rectangle d) None of the above
- The number of points on the line $3x + 4y = 5$, which are at a distance of $\sec^2 \theta + 2\operatorname{cosec}^2 \theta$, $\theta \in R$, from the point $(1, 3)$ is
a) 1 b) 2 c) 3 d) Infinite
- If a variable line drawn through the point of intersection of straight lines $\frac{x}{\alpha} + \frac{y}{\beta} = 1$ and $\frac{x}{\beta} + \frac{y}{\alpha} = 1$ meets the coordinate axes in A and B , then the locus of the mid point of AB is
a) $\alpha\beta(x + y) = xy(\alpha + \beta)$ b) $\alpha\beta(x + y) = 2xy(\alpha + \beta)$
c) $(\alpha + \beta)(x + y) = 2\alpha\beta xy$ d) None of these
- The equation of the line passing through the point of intersection of the lines $x - 3y + 2 = 0$ and $2x + 5y - 7 = 0$ and perpendicular to the line $3x + 2y + 5 = 0$, is
a) $2x - 3y + 1 = 0$ b) $6x - 9y + 11 = 0$ c) $2x - 3y + 5 = 0$ d) $3x - 2y + 1 = 0$
- The equation of line parallel to lines $L_1 \equiv x + 2y - 5 = 0$ and $L_2 \equiv x + 2y + 9 = 0$ and dividing the distance between L_1 and L_2 in the ratio 1 : 6 (internally), is
a) $x + 2y - 3 = 0$ b) $x + 2y + 2 = 0$ c) $x + 2y + 7 = 0$ d) None of these
- The equation of a line passing through $(-2, -4)$ and perpendicular to the line $3x - y + 5 = 0$ is
a) $3y + x - 8 = 0$ b) $3x + y + 6 = 0$ c) $x + 3y + 14 = 0$ d) None of these
- If the equation $3x^2 + xy - y^2 - 3x + 6y + k = 0$ represents a pair of straight lines, then the values of k is
a) 9 b) 1 c) -9 d) 0
- The equation of line through the point $(1, 1)$ and making angles of 45° with the line $x + y = 0$ are
a) $x - 1 = 0, x - y = 0$ b) $x - 1 = 0, y - 1 = 0$
c) $x - y = 0, y - 1 = 0$ d) $x + y - 2 = 0, y - 1 = 0$
- The equation of line bisecting perpendicularly the segment joining the points $(-4, 6)$ and $(8, 8)$, is
a) $y = 7$ b) $6x + y - 19 = 0$ c) $x + 2y - 7 = 0$ d) $6x + 2y - 19 = 0$
- The triangle formed by $x^2 - 3y^2 = 0$ and $x = 4$ is
a) Isosceles b) Equilateral c) Right angled d) None of these

12. The equation of one side of a rectangle is $3x - 4y - 10 = 0$ and the coordinates of two its vertices are $(-2, 1)$ and $(2, 4)$. Then, the area of the rectangle is
 a) 20 sq. units b) 40 sq. units c) 10 sq. units d) 30 sq. units
13. The straight line whose sum of the intercepts on the axes is equal to half of the product of the intercepts, passes through the points
 a) $(1, 1)$ b) $(2, 2)$ c) $(3, 3)$ d) $(4, 4)$
14. The equation of the sides of a triangle are $x - 3y = 0$, $4x + 3y = 5$ and $3x + y = 0$. The line $3x - 4y = 0$ passes through
 a) The incentre b) The centroid c) The orthocentre d) The circumcentre
15. A triangle ABC , right angled at A , has points A and B as $(2, 3)$ and $(0, -1)$ respectively. If $BC = 5$ units, then the point C , is
 a) $(-4, 2)$ b) $(4, 2)$ c) $(3, -3)$ d) $(0, -4)$
16. If the angle θ is acute, then the acute angle between $x^2(\cos \theta - \sin \theta) + 2xy \cos \theta + y^2(\cos \theta + \sin \theta) = 0$ is
 a) 2θ b) $\frac{\theta}{3}$ c) θ d) $\frac{\theta}{2}$
17. The slopes of the lines which make an angle 45° with the line $3x - y = -5$ are
 a) $1, -1$ b) $\frac{1}{2}, -1$ c) $1, \frac{1}{2}$ d) $-2, \frac{1}{2}$
18. Given four lines with equations $x + 2y - 3 = 0$, $2x + 3y - 4 = 0$, $3x + 4y - 5 = 0$, $4x + 5y - 6 = 0$ These lines are
 a) Concurrent b) The sides of a quadrilateral
 c) The sides of a parallelogram d) The sides of a square
19. The distance of the $x + y - 8 = 0$ from $(4, 1)$ measured along the direction whose slope is -2 is
 a) $3\sqrt{5}$ b) $6\sqrt{5}$ c) $2\sqrt{5}$ d) None of these
20. The image of the point $(4, -3)$ with respect to the line $y = x$ is
 a) $(-4, -3)$ b) $(3, 4)$ c) $(-4, 3)$ d) $(-3, 4)$