



INDIAN SCHOOL NIZWA - WORKSHEET

MATHEMATICS Ch-10. Straight Lines

Name: _____

Class: XI Sec: A

1.	Find the values of k for which the line $(k - 3)x - (4 - k^2)y + k^2 - 7k + 6 = 0$ is a) Parallel to the x axis b) Parallel to the y axis c) Passing through the origin.
2.	What are the points on the Y axis whose distance from the line $\frac{x}{3} + \frac{y}{4} = 1$ is 4 units.
3.	Find the perpendicular distance from the origin to the line joining the points $(\cos\theta, \sin\theta)$ and $(\cos\phi, \sin\phi)$.
4.	Find the equation of the lines through the point (3, 2) which makes an angle of 45° with the line $x - 2y = 3$.
5.	Find the equation of the altitude through the point B whose vertices are A(7, -1) B(-2, 8) and C(1, 2).
6.	Find the equation of the line passing through the point (1, 3) such that the intercept on the y-axis exceeds the intercept on the x-axis by 4.
7.	A line passing through the point A(5, 0) making an angle of 30° with positive direction of x-axis. It is rotated at point A through an angle of 15° clockwise direction. Find the equation of the line in a new position.
8.	Find the equation of the passing through the point (2, 2), and cutting off intercepts on the axes whose sum is 9.
9.	Find the equation of a line passing through the point (-4, -5) and perpendicular to the line joining the points (1, 2) and (5, 6).
10.	Find the image of the point (3, 8) with respect to the line $x + 3y = 7$ assuming the line to be a plane mirror.



INDIAN SCHOOL NIZWA - WORKSHEET

11.	Find the slope intercept form, intercept form and normal form of the line $\sqrt{3}x + y - 8 = 0$.
12.	Find the co-ordinates of the foot of the perpendicular drawn from the point $(-1, 3)$ to the line $3x - 4y - 16 = 0$.
13.	Find the distance between the parallel lines $15x + 8y - 34 = 0$ and $15x + 8y + 31 = 0$.
14.	Find the equation of the line passing through the point $(2, 3)$ and making an angle of 45° with the line $2x - y + 7 = 0$.
15.	If the line $3x - 4y + k = 0$ passes through the point of intersection of the lines $2x + 3y - 5 = 0$ and $5x - 2y + 3 = 0$, find the value of k .
16.	The vertices of a triangle are $A(2, 3)$, $B(4, -1)$, $C(1, -3)$. Find the equation of the altitude through vertex A .
17.	If the lines $2x - 3y + 7 = 0$ and $6x + ky - 5 = 0$ are perpendicular, find k .
18.	A new road is being constructed such that it passes through the point $A(2, 3)$ and is parallel to the line joining $B(4, -1)$ and $C(6, 3)$. a) Find the slope of the line passing through points B and C. b) Write the equation of the road (line) that passes through A and is parallel to BC. c) Find the x-intercept and y-intercept of this line. d) Determine the coordinates where this line cuts the y-axis. e) Find the perpendicular distance from the origin to this line.
19.	Two straight railway tracks are represented by the equations $3x - 4y + 5 = 0$ and $6x - 8y + k = 0$. a) Find the relation between the two lines. b) For what value of k will the two tracks coincide? c) Find the perpendicular distance between the two tracks. d) If a new track passes through $(2, 3)$ and is parallel to the above lines, find its equation. e) Find the area of the triangle formed by this new line with the coordinate axes.
20.	An architect designed a glass wall whose edges lie along straight lines. The top edge passes through points $(1, 2)$ and $(3, 6)$, while the bottom edge is parallel to it and passes through the point $(1, -2)$. a) Find the slope of the top edge of the wall. b) Find the equation of the bottom edge. c) Find the perpendicular distance between the top and bottom edges. d) Determine the coordinates of the point where the bottom edge meets the x-axis. e) Find the angle that each line makes with the x-axis.