



INDIAN SCHOOL AL WADI AL KABIR

Class XI, Mathematics **Worksheet- STRAIGHT LINES**

10.01.2023

1. Reduce the equation $x + \sqrt{3}y - 6 = 0$ into Slope - intercept form.
2. Write equation of a line parallel to x axis and passing through (2, 3)
3. Find the value of m and c if the line $y = mx + c$ is parallel to $3x - 2y = 1$ and passing through the point (3,5)
Ans: $\frac{3}{2}$ and $\frac{1}{2}$
4. Show that points $(at_1^2, 2at_1)$, $(at_2^2, 2at_2)$, $(a, 0)$ are collinear if $t_1 t_2 = -1$
5. Find the equation of line passing through the intersection of lines $4x - 3y = 0$ and $2x - 5y + 3 = 0$ and parallel to $4x + 5y + 6 = 0$
Ans: $28x + 35y - 48 = 0$
6. What are the points on x axis whose perpendicular distance from the line $4x + 3y = 12$ is 4 units.
Ans: (8, 0) and (-2, 0)
7. Find the equation of a line that cuts equal intercepts on the coordinate axes and passing through (-2, -3).
Ans: $x + y + 5 = 0$
8. Find the distance between the lines $5x + 12y + 6 = 0$ and $10x + 24y + 24 = 0$ Ans: $\frac{6}{13}$
9. Without using Pythagoras theorem show that (4, 4), (3, 5) and (-4, 1) are the vertices of right triangle.
10. The equation of the side of an equilateral triangle is $x + y + 2 = 0$ and its one of the vertex is (2, -1). Find the equations of the other two sides.
Ans: $(2 - \sqrt{3})x - y - 5 + 2\sqrt{3} = 0$; $(2 + \sqrt{3})x - y - 5 - 2\sqrt{3} = 0$
11. Reduce the equation $2x - 2y = 3$ into i) slope- intercept form ii) Intercept form iii) Normal form
12. The vertices of a triangle are (10, 4), (-4, 9) and (-2, -1). Find the orthocentre. $(-1, \frac{9}{5})$
13. Find the image of the point (1,2) with respect to the line $x - 3y + 4 = 0$ Ans: $(\frac{6}{5}, \frac{7}{5})$
14. The opposite angular points of a square are (3, 4) and (1, -1). Find the coordinates of the other two vertices.
Ans: $(-\frac{1}{2}, \frac{5}{2})$ and $(\frac{9}{2}, \frac{1}{2})$
