

Worksheet-1
Topic: - Straight Line (Basic)

1. Find the slope of the line making inclination of 30° with positive direction of x - axis.
2. Find the slope of the line passing through the points $(3, -2), (-1, 4)$.
3. If the angle between two lines is $\pi/4$ and slope of one of lines is $1/2$, find the slope of the other line.
4. If line through the points $(-2, 6)$ and $(4, 8)$ is perpendicular to the line through the points $(8, 12)$ and $(x, 24)$. Find the value of x .
5. Find a point on the x - axis, which is equidistance from the points $(7, 6)$ and $(3, 4)$.
6. Find the slope of a line, which passes through the origin, and the mid-point of the line segment joining the points $(0, -4)$ and $(8, 0)$.
7. Find the distance between the parallel lines $3x - 4y + 7 = 0$ and $3x - 4y + 5 = 0$.
8. Find the distance of the point $(3, 5)$ from the line $3x - 4y - 26 = 0$.
9. Find the angle between x - axis and the line joining the points $(3, -1)$ and $(4, -2)$.
10. Find the equations of the lines parallel to axes and passing through $(-2, 3)$.
11. Find the equation of the line through $(-2, 3)$ with slope -4 .
12. Write the equation of the line through the points $(1, -1), (3, 5)$.
13. Write the equation of the lines for which $\tan\theta = 12$, where θ is the inclination of the line and (i) y - intercept is -32 (ii) x - intercept is 4 .
14. Find the equation of the line, which makes intercepts -3 and 2 on x - and y - axes respectively.
15. Find the equation of the line whose perpendicular distance from the origin is 4 units and the angle which the normal makes with positive direction of x - axis is 15° .
16. Find the equations for the x - and y - axes.

17. Find the equation of line passing through $(0, 0)$ with slope m .
18. Find the equation of line which is intersecting the x - axis at a distance of 3 units to the left of origin with slope -2 .
19. The vertices of ΔPQR are $(2, 1)$, $Q(-2, 3)$ and $R(4, 5)$. Find the equation of the median through the vertex R.
20. Find the equation of the line passing through $(-3, 5)$ and perpendicular to the line through the points $(2, 5)$, $(-3, 6)$.
21. A line perpendicular to the line segment joining the points $(1, 0)$ and $(2, 3)$ divides it in the ratio $1: n$. Find the equation of the line.
22. Find the equation of the line that cuts off equal intercepts on the coordinate axes and passes through the point $(2, 3)$.
23. Find the equation of the line passing through the point $(2, 2)$ and cutting off intercepts on the axes whose sum is 9.
24. The perpendicular from the origin to a line meets it at the point $(-2, 9)$, find the equation of the line.
25. (a, b) is the mid-point of a line segment between axes. Show that the equation of the line is $xa + yb = 2$.
26. By using the concept of equation of a line, prove that the three points $(3, 0)$, $(-2, -2)$ and $(8, 2)$ are collinear.
27. Equation of a line is $3x - 4y + 10 = 0$. Find its (i) slope, (ii) x - and y -intercepts.