1. Three consecutive vertices of a parallelogram are $(-2,-1),(1,0)$ and $(4,3)$, find the fourth vertex.
2. For what value of k are the points $(8,1),(\mathrm{k},-4)$ and $(2,-5)$ collinear?
3. The midpoint of the segment joining $(a, b)$ and $(-3,4 b)$ is $(2,3 a+4)$. Find $a$ and $b$.
4. Coordinates of centroid of $\Delta \mathrm{ABC}$ are $(1,-1)$. Vertices of $\Delta \mathrm{ABC}$ are $\mathrm{A}(-5,3), \mathrm{B}(\mathrm{p},-1)$ and $\mathrm{C}(6, q)$. Find p and q .
5. In what ratio $y$-axis divides the line segment joining the points $(3,4)$ and $(-2,1)$ ?
6. What are the possible slopes of a line which makes equal angle with both axes?
7. Determine $x$ so that slope of line through points $(2,7)$ and $(x, 5)$ is 2 .
8. Show that the points $(\mathrm{a}, 0),(0, \mathrm{~b})$ and $(3 \mathrm{a},-2 \mathrm{~b})$ are collinear.
9. Write the equation of a line which cuts off equal intercepts on coordinate axes and passes through $(2,5)$.
10. Find $k$ so that the line $2 x+k y-9=0$ may be perpendicular to $2 x+3 y-1=0$
11. Find the acute angle between lines $x+y=0$ and $y=0$
12. Find the angle which $\sqrt{3} x+y+5=0$ makes with positive direction of x -axis.
13. If origin is shifted to $(2,3)$, then what will be the new coordinates of $(-1,2)$ ?
14. On shifting the origin to $(\mathrm{p}, \mathrm{q})$, the coordinates of point $(2,-1)$ changes to $(5,2)$. Find p and q .
15. If the image of the point $(3,8)$ in the line $p x+3 y-7=0$ is the point $(-1,-4)$, then find the value of $p$.
16. Find the distance of the point $(3,2)$ from the straight line whose slope is 5 and is passing through the point of intersection of lines $x+2 y=5$ and $x-3 y+5=0$
17. The line $2 x-3 y=4$ is the perpendicular bisector of the line segment $A B$. If coordinates of $A$ are $(-3,1)$ find coordinates of B .
18. The points $(1,3)$ and $(5,1)$ are two opposite vertices of a rectangle. The other two vertices lie on line $y=2 x+c$. Find $c$ and remaining two vertices.
19. If two sides of a square are along $5 x-12 y+26=0$ and $5 x-12 y-65=0$ then find its area.
20. Find the equation of a line with slope -1 and whose perpendicular distance from the origin is equal to 5 .
21. If a vertex of a square is at $(1,-1)$ and one of its side lie along the line $3 x-4 y-17=0$ then find the area of the square.
22. Find the coordinates of the orthocentre of a triangle whose vertices are $(-1,3)(2,-1)$ and $(0,0)$.
23. Find the equation of a straight line which passes through the point of intersection of $3 x+4 y-1=0$ and $2 x-5 y+7=0$ and which is perpendicular to $4 x-2 y+7=0$.
24. If the image of the point $(2,1)$ in a line is $(4,3)$ then find the equation of line.
25. Find points on the line $x+y+3=0$ that are at a distance of $\sqrt{5}$ units from the line $x+2 y+2=0$.
26. Find the equation of a straight line which makes acute angle with positive direction of x -axis, passes through point $(-5,0)$ and is at a perpendicular distance of 3 units from origin.
27. One side of a rectangle lies along the line $4 x+7 y+5=0$. Two of its vertices are $(-3,1)$ and $(1,1)$. Find the equation of other three sides.
28. If $(1,2)$ and $(3,8)$ are a pair of opposite vertices of a square, find the equation of the sides and diagonals of the square.
29. Find the equations of the straight lines which cut off intercepts on $x$-axis twice that on $y$-axis and are at a unit distance from origin.
30. Two adjacent sides of a parallelogram are $4 x+5 y=0$ and $7 x+2 y=0$. If the equation of one of the diagonals is $11 x+7 y=4$, find the equation of the other diagonal.
31. Find the slope of a line, whose inclination is a) $45^{\circ}$
b) $150^{\circ}$
32. Find the slope of the line through the points: a) $(1,2)$ and $(4,2)$
b) $(0,-4)$ and $(-6,2)$.
33. Determine $x$, so that 2 is the slope of the line through points $(2,5)$ and $(x, 3)$.

## ANSWERS



