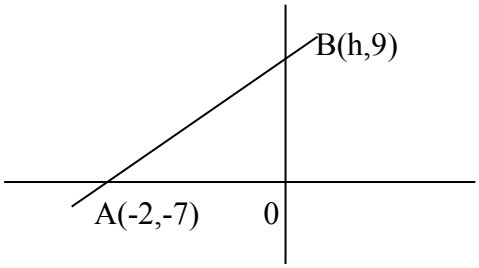
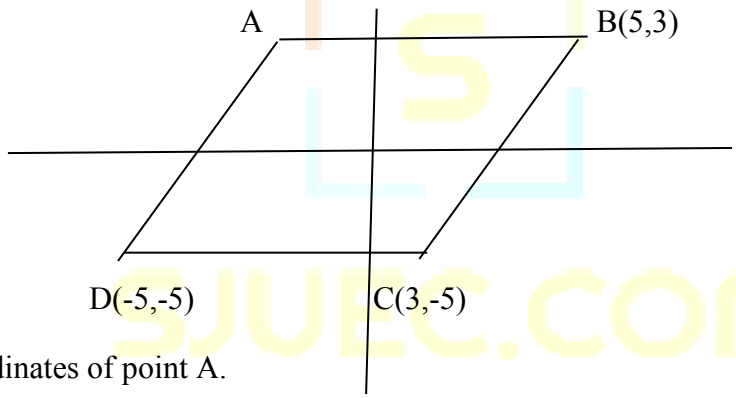
1. Given that the points P(2,3), Q(-1,7) and R(3,0) are the vertices of a triangle PQR, find the perimeter of the triangle.
2. Given the points A (3h,h), B(3,11) and the distance between point A and B is 10 units, find the possible values of h
3. Points T (0,k) and V(-4,3) are two points that are equidistant from the origin. Find the value of k
4. Given that points P(-6,4) or (r,0), R(-3,2) and S(-2.6) are four points on the Cartesian plane, find the value of r if the distance of PQ is equal to the distance of RS.
5. The diagram shows two points on a Cartesian plane.

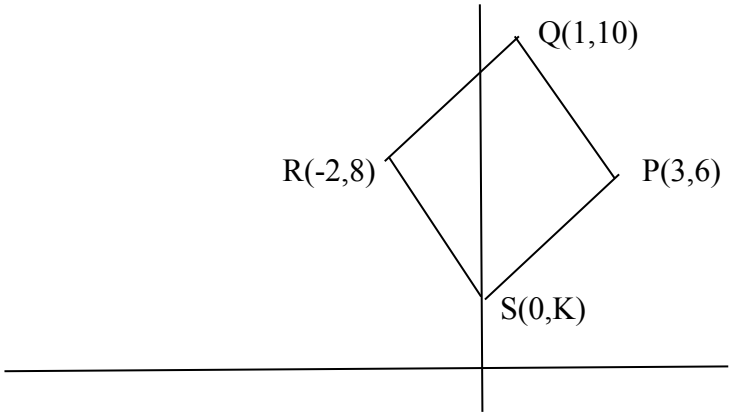


   Given that the distance between point A and point B is 20 units, find the possible values of h.
6. Given that A(h,4), B(-5,k) and C(1,1) are three points on a straight line in a Cartesian plane, find the values of h and k if C is the midpoint of A and B.
7. The diagram shows a parallelogram ABCD on a Cartesian plane.



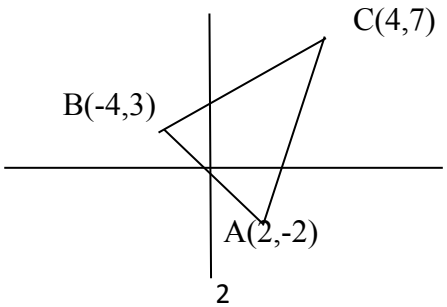
   Find the coordinates of point A.
8. Given that the points P(x,7) , Q(3,7), R(3,y) and S(-5,-5) are vertices of a parallelogram, find the values of x and y
9. Given the points A (h,4), B(5,-1) and C(7,k) are three points on a straight line in a Cartesian plane, find the values of h and k if point C divides AB in the ratio of 3:2.
10. Given that point T(1,4) divides the straight line joining the point H(7,6) and K(-2,3) in the ratio of p:q. Find the values of p and q
11. Given that point R(-1,8) is situated on the straight line joining the point P(8,-4) and Q(-4,12), find the ratio of PR:RQ.
12. A(4,-3), B(6,-1), and C are the three points on a straight line. Given that 3AB=2BC, find the coordinates of point C
13. Given that A(5,6), B(5,2) and C(10,7) are three points on a Cartesian plane. Find the area of the triangle ABC.
14. Find the area of quadrilateral PQRS with vertices P(-1,4), Q(2,2), R(0,-3) and S(-1,-1)
15. The points H(1,7), I(4,3),J(1,-1) and K are the vertices of a rhombus. Find
    a. The coordinates of point k
    b. The area of the rhombus HIJK

16. The vertices of a triangle are A(3,4), B(-4,1) and C(1,2h). If the area of the triangle ABC is 18unit^2, find the possible values of h.
17. Given pojnts A(3k,1), B(3,4) , C(-2,5) and D(0,7) are collinear, find the possible values of k.
18. A triangle ABC with vertices A(k,-1) B(h,1) and C(-2,3) has an area of 9 unit^2. Find the possible values of 2h-k.
19. The diagram shows a quadrilateral PQRS.



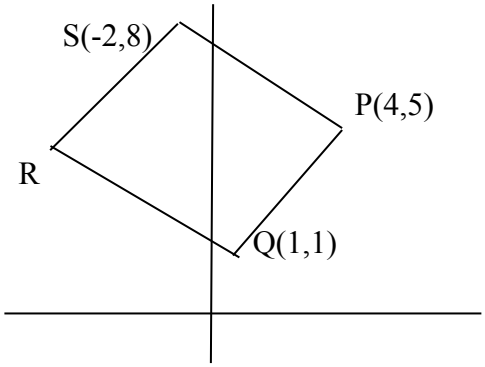
If the area of quadrilateral PQRS is twice the area of the triangle PQR, find the value of k.

20. H(-3,2), J(3,-2) and K(7,8) are three points on the Cartesian plane. Given point M is the midpoint of JK, find the area of the triangle HJM.
21. A(-5,1), B(-1,k) and C(7,10) are three collinear points on a Cartesian plane. Find the value of k.
22. A straight line passes through point A(-7,-8) and B(5,11) on a Cartesian plane. Find the equation of the straight line AB in intercept form.
23. A straight line has a gradient of $\frac{1}{3}$ and passes through the midpoint of the line joining the points P(3,-2) amd Q(1,8). Find the equation of the straight line.
24. A straight line passes through the points T(-2,1) and U(1,10). Find the x-intercept of the straight line TU.
25. Given that the straight line $y = x + 2$ and $y = -\frac{4}{3}x + \frac{1}{3}$ intersect at point A. Find the coordinates of the point A.
26. A straight line that has a gradient of $\frac{3}{2}$ and passes through point P(-2,-7) intersects another straight line $2y + x = 8$ at point R.
    a. Find the equation of the straight line that passes through point P
    b. Hence, determine the point of intersection of the two straight lines.
27. Find the equation of the straight line that is parallel to the line $\frac{x}{4} - \frac{y}{2} = 1$ and passes through point (2,1).
28. Given that equation of the straight lines $2y = (h-3)x - 3$ and $y - 2kx = 3$ are parallel, express h in terms of k.
29. The diagram shows a triangle ABC on a Cartesian plane.



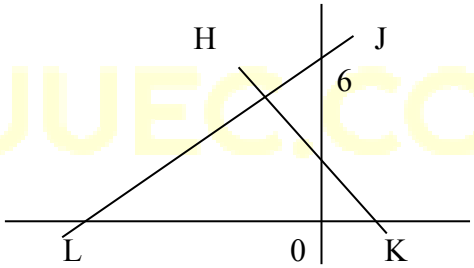
Find the equation of the straight line that is parallel to the straight line BC and passes through point A.

30. The diagram shows a parallelogram PQRS.



Find the equation of the straight line QR.

31. The equation of two straight lines on the Cartesian plane are $\frac{x}{5}+\frac{y}{2}=1$ and $5x-2y=8$. Determine whether the lines are perpendicular to each other.
32. Find the equation of the straight line that passes through point P(-4,1) and is perpendicular to the straight line $4y-12s+6=0$.
33. X(1,9) and Y(-5,-7) are two points on a Cartesian plane. Find the equation of the perpendicular bisector of the straight line XY.
34. The straight line $y-px=12$ is perpendicular to straight line $2y+qx=6$. Express p in terms of q
35. The diagram shows a straight line HK perpendicular to line JL.



Given the equation of straight line HK is $y+x-3=0$, find the point of intersection between two straight lines.

36. Given that P (x,y) is a moving point such that it is equidistant from point X(2,3) and point Y(-4,5), find the equation of the locus of P
37. A(-1,2) and B(3,7) are two points on a Cartesian plane. Given that point (x,y) is a moving point such that PA:PB=1:3, find the equation of the locus of P
38. A point P moves such that its distance from point H(-1,4) is always 7 units . Find the equation of the locus of P.