RK TUITION CENTRE - KUMBAKONAM

10TH MATHEMATICS
COORDINATE GEOMETRY

25 X 1 = 25

1. The area of triangle formed by the points $(-5,0), (0,-5)$ and $(5,0)$ is
   (a) 0 sq.units (b) 25sq.units (c) 5sq.units (d) none of these
2. A man walks near a wall, such that the distance between him and the wall is 10 units. Consider the wall to be the Y axis. The path travelled by the man is
   (a) $x = 10$ (b) $y = 10$ (c) $x = 0$ (d) $y = 0$
3. The straight line given by the equation $x = 11$is
   (a) Parallel to X axis (b) parallel to Y axis (c) passing through the origin
   (d) Passing through the point $(0,11)$
4. If $(5,7), (3,p)$ and $(6,6)$ are collinear, then the value of p is
   (a) 3 (b) 6 (c) 9 (d) 12
5. The points of intersection of $3x - y = 4$and $x + y = 8$ is
   (a) $(5,3)$ (b) $(2,4)$ (c) $(3,5)$ (d) $(4,4)$
6. The slope of the line joining $(12,3), (4,a)$ is $\frac{1}{8}$. The value of $'a'$ is
   (a) 1 (b) 4 (c) -5 (d) 2
7. The slope of the line which is perpendicular to line joining the points $(0,0)$ and $(-8,8)$
   (a -1 (b) 1 (c) $\frac{1}{3}$ (d) -8
8. If slope of the line PQ is $\frac{1}{\sqrt{3}}$ then the slope of the perpendicular bisector of PQ is
   (a)$\sqrt{3}$ (b) $-\sqrt{3}$ (c) $\frac{1}{\sqrt{3}}$ (d) 0

9. If A is a point on the Y axis whose ordinate is 8 and B is a point on the X axis whose abscissae is 5 then the equation of the line AB is
   (a) $8x + 5y = 40$ (b) $8x - 5y = 40$ (c) $x = 8$ (d) $y = 5$
10. The equation of a line passing through the origin and perpendicular to the line
    (a) $7x - 3y + 4 = 0$ (b) $3x - 7y + 4 = 0$ (c) $3x + 7y = 0$ (d) $7x - 3y = 0$
11. Consider four straight lines
    (i) $I_1: 3y = 4x + 5$
    (ii) $I_2: 4y = 3x - 1$
    (iii) $I_3: 4y + 3x = 7$
    (iv) $I_4: 4x + 3y = 2$
    Which of the following statement is true?
    (a) I_1 and I_2 are perpendicular (b) I_1 and I_4 are parallel
    (c)I_2 and I_4 are perpendicular (d) I_2 and I_3 are parallel
12. A straight line has equation $8y = 4x + 21$. Which of the following is true
    (a) The slope is 0.5 and the y intercept is 2.6
    (b) The slope is 5 and the y intercept is 1.6
    (c) The slope is 0.5 and the y intercept is 1.6
    (d) The slope is 5 and the y intercept is 2.6

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13. When proving that a quadrilateral is trapezium, it is necessary to show
    (a) Two sides are parallel (b) Two parallel and two non-parallel sides
    (c) Opposite sides are parallel (d) All sides are of equal length
14. When proving that a quadrilateral is a parallelogram by using slopes you must find
    (a) The slopes of two sides (b) The slopes of two pair of opposite sides
    (c) The length of all sides (d) Both the lengths and slopes of two sides
15. (2,1) is the point of intersection of two lines.
    (a) $x - y - 3 = 0; 3x - y - 7 = 0$ (b) $x + y = 3; 3x + y = 7$
    (c) $3x + y = 3; x + y = 7$ (d) $x + 3y - 3 = 0; x - y - 7 = 0$
16. Find the ratio in which the line segment joining the points $(-3,10)$ and $(6,-8)$ is internally divided by $(-1,6)$:
    (a) $7:2$ (b) $3:4$ (c) $2:7$ (d) $5:3$
17. f the points $(0,0), (a,0)$ and $(0,b)$ are collinear, then
    (a) $a = b$ (b) $a + b$ (c) $ab = 0$ (d) $a \neq b$
18. If the mid-point of the line segment joining $A\left(\frac{x}{2}, \frac{y+1}{2}\right)$ and $B(x+1, y-3)$ is $C(5,-2)$ then find the values of x, y:
    (a) $(6,-1)$ (b) $(-6,1)$ (c) $(-2,1)$ (d) $(3,5)$
19. The area of triangle formed bu the points $(a+b+c), (b, c+a)$ and $(c, a+b)$ is
    (a) $a+b+c$ (b) abc (c) $(a+b+c)^2$ (d) 0
20. Find the equation of the line passing the point which h is parallel to the y axis $(5,3)$ is
    (a) $y = 5$ (b) $y = 3$ (c) $x = 5$ (d) $x = 3$
21. Find the slope of the line $2y = x + 8$:
    (a) $\frac{1}{2}$ (b) 1 (c) 8 (d) 2
22. The area of the rhombus formed by the points $(3,0), (0,4), (-3,0)$ and $(0,-4)$ is
    (a) 24 (b) 30 (c) 32 (d) 36
23. The point (x, y) lies on the line joining $(3,4)$ and $(-5,-6)$ if
    (a) $4x - 5y = 1$ (b) $5x - 4y = 1$ (c) $5x - 4y + 1 = 0$ (d) $4x + 5y = 1$
24. The value of $'x'$ if the slope of the line joining $(2,5)$ and $(x,3)$ is 2
    (a) 4 (b) 3 (c) 2 (d) 1
25. Equation of straight line which cuts off intercepts 2 and 3 from the co-ordinate axes is
    (a) $2x - 3y - 6 = 0$ (b) $2x + 3y - 6 = 0$ (c) $3x - 2y - 6 = 0$ (d) $3x + 2y - 6 = 0$

17 X 2 = 34

26. Determine whether the sets of points are collinear? $\left(-\frac{1}{2}, 3\right), (-5,6)$ and $(-8,8)$
27. Vertices of given triangles are taken in order and their areas are provided aside. In each case, find the value of $'p'$?

S.No.	Vertices	Area (sq.units)
(i)	$(0,0), (p,8), (6,2)$	20
(ii)	$(p,p), (5,6), (5,-2)$	32

28. What is the slope of a line whose inclination is 30°?
29. The linear r passes through the points $(-2,2)$ and $(5,8)$ and the line θ passes through the points $(-8,7)$ and $(-2,0)$. Is the line r perpendicular to s?

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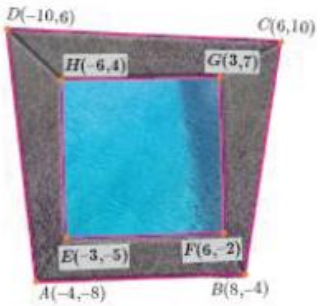
30. The line p passes through the points $(3,-2)$, $(12,4)$ and the line q passes through the points $(6,-2)$ and $(12,2)$. Is parallel to q?
31. Show that the points $(-2,5), (6,-1)$ and $(2,2)$ are collinear.
32. If the three points $(3,-1), (a,3)$ and $(1,-3)$ are collinear, find the value of a.
33. The line through the points $(-2,a)$ and $(9,3)$ has slope $-\frac{1}{2}$. Find the value of a.
34. The 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.
35. Show that the given vertices form a right angled triangle and check whether its satisfies Pythagoras theorem $A(1,-4), B(2,-3)$ and $C(4,-7)$
36. Find the equation of straight line whose slope is 5 and y intercept is -9
37. Calculate the slope and y intercept of the straight line $8x-7y+6=0$
38. Find the equation of a line passing through the point $(3,-4)$ and having slope $\frac{-5}{7}$
39. Find the equation of a line passing through the point $A(1,4)$ and perpendicular to the line joining points $(2,5)$ and $(4,7)$.
40. Find the equation of a straight line passing through $(5,-3)$ and $(7,-4)$.
41. Find the equation of a line which passes through $(5,7)$ and makes intercepts on the axes equal in magnitude but opposite in sign.
42. Find the intercepts made by the line $4x-9y+36=0$ on the coordinate axes.

16 X 5 = 80

43. If the area of the triangle formed by the vertices $A(-1,2)$, $B(k,-2)$ and $C(7,4)$ (taken in order) is 22sq. units, find the value of k.
44. If the points $P(-1,-4), Q(b,c)$ and $R(5,1)$ are collinear and if $2b+c=4$, find the values of b and c.
45. The floor of a hall is covered with identical tiles which are in the shapes of triangles. One such triangle has the vertices at $(-3,2), (-1,-1)$ and $(1,2)$. If the floor of the hall is completely covered by 110 tiles, find the area of the floor.
46. Find the area of the quadrilateral formed by the points $(8,6), (5,11), (-5,12)$ and $(-4,3)$.
47. Find the value of k, if the area of a quadrilateral is 28 sq.units, whose vertices are $(-4,-2), (-3,k), (3,-2)$ and $(2,3)$
48. If the points $A(-3,9), B(a,b)$ and $C(4,-5)$ are collinear and if $a+b=1$, then find a and b.
49. Let $P(11,7), Q(13.5,4)$ and $R(9.5,4)$ be the midpoints of the sides AB, BC and AC respectively of ΔABC. Find the coordinates of the vertices A, B and C. Hence find the area of ΔABC and compare this with area of ΔPQR.
50. In the figure, the quadrilateral swimming pool shown is surrounded by concrete patio. Find the area of the patio.



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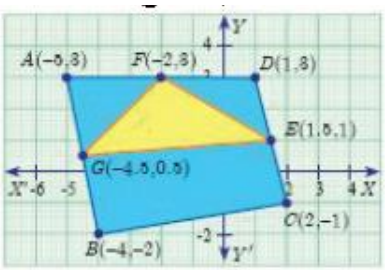
51. In the figure, find the area of triangle AGF



52. If the points $A(2,2), B(-2,-3), C(1,-3)$ and $D(x,y)$ form a parallelogram then find the value of x and y.
53. A quadrilateral has vertices $A(-4,-2), B(5,-1), C(6,5)$ and $D(-7,6)$. Show that the mid-points of its sides form a parallelogram.
54. Find the equation of the median and altitude of ΔABC through A where the vertices are $A(6,2), B(-5,1)$ and $C(1,9)$
55. Find the equation of a straight line passing through $(1,4)$ and has intercepts which are in the ratio $2:5$
56. $A(-3,0)B(10,-2)$ and $C(12,3)$ are the vertices of ΔABC. Find the equation of the altitude through A and B.
57. If vertices of quadrilateral are at $A(-5,7), B(-4,k), C(-1,-6)$ and $D(4,5)$ and its area is 75sq.units. Find the value of k.
58. Find the equation of the lines, whose sum and product of intercepts are 1 and 6 respectively.

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