Virudhunagar District
Common Second Mid Term Test - 2023

Standard 9

Time: 1.30 Hrs.   **MATHEMATICS**   Marks: 50

Part - I

Answer the following: 7×1=7

1) If the diagonal of a rhombus are equal, then the rhombus is a
   a) Parallelogram but not a rectangle   b) Square
   c) Rectangle but not a square   d) Parallelogram but not a square

2) A chord is at a distance of 15 cm from the centre of the circle of radius 25 cm. The length of the chord is
   a) 25 cm   b) 20 cm   c) 40 cm   d) 18 cm

3) In the given figure, If OP = 17 cm, PQ = 30 cm and OS is perpendicular to PQ, then RS is
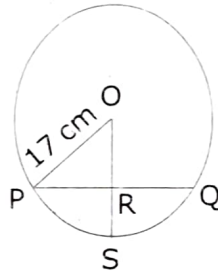

   a) 10 cm   b) 6 cm   c) 7 cm   d) 9 cm

4) The point whose ordinate is 4 and which lies on the x-axis is
   a) (4, 0)   b) (0, 4)   c) (1, 4)   d) (4, 2)

5) In what ratio does the y-axis divides the line joining the points (−5, 1) and (2, 3) internally.
   a) 1:3   b) 2:5   c) 3:1   d) 5:2

6) If (x+2, 4) = (5, y−2) then the co-ordinates (x, y) are
   a) (7, 12)   b) (6, 3)   c) (3, 6)   d) (2, 1)

7) If the co-ordinates of one end of a diameter of a circle is (3, 4) and the co-ordinates of its centre is (−3, 2) then the coordinate of the other end of the diameter is
   a) (0, −3)   b) (0, 9)   c) (3, 0)   d) (−9, 0)

Part - II

Answer ANY FIVE of the following questions: 5×2=10
(Q.No. 14 is compulsory)

8) Find the value of x° in the figure.
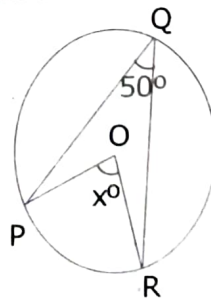
9) A chord is 12 cm away from the centre of the circle of radius 15 cm. Find the length of the chord.

10) The angles of a quadrilateral are in the ratio 2:4:5:7. Find all the angles.

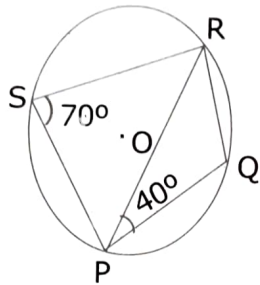11) Calculate the distance between the points A (7, 3) and B which lies on the x-axis whose abscissa is 11.

12) In which quadrant does the following points lie?
   (i) (−5, 3) (ii) (−30, −30) (iii) (12.5, 10) (iv) (4, −1)

13) The centre of a circle is (−4, 2). If one end of the diameter of the circle is (−3, 7), then find the other end.

14) If the centroid of a triangle is at (4, −2) and two of its vertices are (3, −2) and (5, 2) then find the third vertex of the triangle.

Part - III

Answer ANY FIVE in the following questions: 5×5=25
(Q.No. 21 is compulsory)

15) In a parallelogram ABCD the bisectors of the consecutive angles ∠A and ∠B intersect at P show that ∠APB = 90º.

16) If PQRS is a cyclic quadrilateral in which ∠PSR = 70º and ∠QPR = 40º, then find ∠PRQ.

17) Two circles of radii 5 cm and 3 cm intersect at two points and the distance between their centres is 4 cm. Find the length of the common chord.

18) (7, −2), (5, 1), (3, 4) whether the given set of points are collinear or not.

19) The mid points of the sides of a triangle are (5, 1), (3, −5) and (−5, −). Find the co-ordinates of the vertices of the triangle.

20) Find the co-ordinates of the points of trisection of the line segment joining the points A(−5, 6) and B(4, −3).

21) Find the value of 'a' such that PQ = QR where P, Q and R are the points whose co-ordinates are (6, −1), (1, 3) and (a, 8) respectively.

Part - IV

Answer ANY ONE of the following: 1×8=8

22) Use graphical method to solve the following system of equations:
   x+y = 5; 2x−y = 4   **(OR)**

   Draw the graph for the following: $y = \left(\dfrac{3}{2}\right)x + 3$