SUCCESS INSTITUTE   <u>Assignment - 72</u> 10th Class Expert

Q1. Find the value(s) of x for which the distance between the points P $(x,\ 4)$ and Q $(9,\ 10)$ is 10 units.   Ans. 1 or 17

Q2. Find the value of x for which the distance between the points P $(x,\ 2)$ and Q $(3,-6)$ is 10 units.   Ans. 9 or -3

Q3. Find the values of y for which the distance between the points P $(2,-3)$ and Q $(10,y)$ is 10 units.   Ans. 3 or -9

Q4. Find the values of y for which the distance between the points A $(3,-1)$ and B $(11,y)$ is 10 units.   Ans. 5 or -7

Q5. If the point A(0 , 2) is equidistant from the points B(3, p) and C(p, 5), then find the value of p.   Ans. $p = 1$

Q6. Find the value of k , if the point P(2 , 4) is equidistant from the points A (5, k) and B (k, 7).   Ans. k = 3

Q7. Find the point on the x-axis which is equidistant from $(2,-5)$ and $(-2,\ 9)$.   Ans. $(-7,\ 0)$

Q8. Find the point on the x-axis which is equidistant from $(-1,0)$ and $(5,\ 0)$.   Ans. $(2,\ 0)$

Q9. Find the point on the y-axis which is equidistant from $(-5,-2)$ and $(3,\ 2)$.   Ans. $(0,-2)$

Q10. Find the point on the y-axis which is equidistant from $(6,\ 5)$ and $(-4,\ 3)$.   Ans. $(0,\ 9)$

Q11. Find a relation between x and y such that the point (x,y) is equidistant from the points $(7,\ 1)$ and $(3,\ 5)$.
    Ans. $x - y = 2$

Q12. Find a relation between x and y such that the point (x,y) is equidistant from the points $(3,\ 6)$ and $(-3,4)$.
    Ans. $3x + y - 5 = 0$

Q13. Name the type of quadrilateral formed, if any, by the following points and give reasons for your answer :
  (i) $(-1,-2),(1,0),(-1,2),(-3,0)$ (ii) $(4,5),(7,6),(4,3),(1,2)$ Ans. (i) Square (ii) Parallelogram
  (iii) $(-1,-1),(-1,4),(5,4),(5,-1)$ (iv) $(3,0),(4,5),(-1,4),(-2,-1)$ Ans. (iii) Rectangle (iv) Rhombus

Q14. Show that they are the vertices of A(1 ,−2) , B(3 , 6) , C(5 , 10) and D(3 , 2) are the vertices of a parallelogram.

Q15. Show that they are the vertices of A(−4 ,−1) , B(−2 ,−4) , C(4 , 0) and D(2 , 3) are the vertices of a rectangle.

Q16. Show that they are the vertices of A(2 ,−1) , B(3 , 4) , C(−2 , 3) and D(−3 ,−2) are the vertices of a rhombus.

Q17. Show that they are the vertices of A(1 , 7) , B(4 , 2) , C(−1 ,−1) and D(−4 , 4) are the vertices of a square.

Q18. Show that they are the vertices of A(3 , 0) , B(6 , 4) and C(−1 , 3) are the vertices of right-angled isosceles triangle.

Q19. Show that they are the vertices of A(7 , 10) , B(−2 , 5) and C(3 ,−4) are the vertices of right-angled isosceles triangle.

Q20. If the points A(4 , 3) and B(x , 5) are on the circle with centre O(2 , 3) , find the value of x .   *Ans. $x = 2$*

Q21. If the points A(8 , 7) and B(6 , y) are on the circle with centre O(2 , 3) , find the value of y .   *Ans. $y = -3\ or\ 9$*

Q22. Do all the points A(3 , 2) , B(−2 ,−3) and C(2 , 3) form a triangle ? If so, name the type of triangle formed.

Q23. Do all the points A(2 ,−2) , B(−2 , 1) and C(5 , 2) form a triangle ? If so, name the type of triangle formed.

Q24. If two vertices of an equilateral triangle are (0 , −3) and (0 , 3) , find the third vertex.   Ans. $(\pm 3\sqrt{3},0)$

Q25. If two vertices of an equilateral triangle are (−4 , 0) and (4 , 0) , find the third vertex.   Ans. $(0,\ \pm 4\sqrt{3})$