INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2024-25

CLASS: X SUBJECT: MATHEMATICS DATE: 15 -11-2024

LESSON: 07 COORDINATE GEOMETRY

Level 1:

1. Find the distance between the points
   a) (-7,-3) and (-5,-11) (Ans: $\sqrt{68}$)
   b) (a,0) and (0, b) (Ans: $\sqrt{a^2 + b^2}$)
   c) (a sinα,-b cosα) and (-a cosα,b sinα)
   (Ans: $\sqrt{a^2 + b^2}$(sinα + cosα)
2. Show that the points (-4,-1), (-2,-4), (4,0) and (2,3) are the vertices of a rectangle.
3. Prove that the point (-2,5), (0,1), and (2,-3) are collinear
4. Point P(x,y) is equidistant from the points A(6,2) and B(2,6), Prove that x = y
5. If the point P (2,2) is equidistant from the points A (-2, k) and B(-2k,-3) , Find k. Also find the length of AP (Ans: k =-1,-3;AP = 5 or $\sqrt{41}$)
6. If two vertices of an equilateral triangle are (0,0) and (3,$\sqrt{3}$). Find the third vertex (Ans: (0, 2$\sqrt{3}$)
7. The centre of the circle is (2a, a – 7). Find the value of a if the circle passes through the point (11,-9) and has the diameter 10$\sqrt{2}$ units
   (Ans: 5,3)
8. Find the coordinate of the points which divide the line segment joining (-1,3) and (4,-7) internally in the ratio 3:4 (Ans: ($\frac{8}{7}$, $\frac{-9}{7}$))
9. The line segment joining the points A (4,-5) and B(4,5) is divided by the point P such that AP: AB = 2:3.Find the coordinates of P (Ans: (4,-1))
10. Points A (3,1), B (5,1), C (a,b),D (4,3) are vertices of a parallelogram ABCD. Find the values of a and b (Ans: a = 6, b = 3)
11. Find the coordinates of the midpoint of the line segment joining the points
    a) A (3,-4) and B (-7, 8) (Ans: (-2, 2))
    b) A (-7,-4) and B (1,6) (Ans: (-3, 1))

12. If (2, 4) is the midpoint of the line segment joining (6, 3) and (a, 5), then find the value of a (Ans:-2)
13. If the centre of the circle is ($\frac{4}{3}$,-2) and one end of the diameter is (3, 2), then find the coordinates of the other end (Ans:($\frac{-1}{3}$,-6))

Level 2:

14. Two opposite vertices of a square are (-1, 2) and (3,2). Find the coordinates of the other two vertices. (Ans: (1,0), (1, 4))
15. Find the length of the median AD of ΔABC having vertices A (0,-1) B (2, 1) and C (0, 3) (Ans: $\sqrt{10}$ units)
16. The point P (x,y) divides the line segment joining the points A (-1,3) and B (9,8) such that AP: PB = k : 1. If the coordinates of P are such that x = y, then find the value of k (Ans: 4)
17. If the coordinates of the midpoints of the sides of a triangle are (1,2), (0,-1) and (2,-1).Find the coordinates of its vertices (Ans: ((1,-4), (3,2), (-1,2))

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