CLASS X Math - Previous Year Question
Coordinate Geometry

Q1. The distance between the points

$(a \cos \theta + b \sin \theta, \, 0)$ and $(0, \, a \sin \theta - b \cos \theta)$ is **[2020]** **[1 Marks]**

(a) $a^2 + b^2$ (b) $a^2 - b^2$ (c) $\sqrt{a^2 + b^2}$ (d) $\sqrt{a^2 - b^2}$

Q2. If the point $p(k, 0)$ divides the line segment joining the points A(2,-2) and B(-7,4) in the ratio 1:2, then the value of k is **[2020]** **[1 Marks]**

(a) 1 (b) 2 (c) -2 (d) -1

Q3. If A$(3, \sqrt{3})$, $B(0,0)$ and $C(3, \, k)$ are the three vertices of an equilateral triangle ABC, then the value of k is **[2021]** **[1 Marks]**

(a) 2 (b) -3 (c) $-\sqrt{3}$ (d) $-\sqrt{2}$

Q4. Three vertices of a parallelogram ABCD are A(1, 4), B(-2, 3), and C(5, 8). The ordinate of the fourth vertex D is **[2021]** **[1 Marks]**

(a) 8 (b) 9 (c) 7 (d) 6

Q5. Points A(-1, y) and B(5, 7) lie on a circle with centre O(2,-3y). The values of y are **[2021]** **[1 Marks]**

(a) 1, -7 (b) -1, 7 (c) 2, 7 (d) -2, -7

Q6. If A (4, -2), B (7, -2) and C (7, 9) are the vertices of a ΔABC, then ΔABC is **[2021]** **[1 Marks]**

(a) Equilateral triangle (b) isosceles triangle

(c) right-angle triangle (d) isosceles right-angle triangle

Q7. The line segment joining the points P(-3, 2) and Q(5, 7) is divided by the y-axis in the ratio **[2021]** **[1 Marks]**

(a) $3:1$ (b) $3:4$ (c) $3:2$ (d) $3:5$

Q8. The ratio in which the line $3x + y - 9 = 0$ divides the line segment joining the points (1, 3) and (2, 7) is **[2021]** **[1 Marks]**

(a) $3:2$ (b) $2:3$ (c) $3:4$ (d) $4:3$

Q9. The base BC of an equilateral ΔABC lies on y-axis. The co-ordinates of C are (0, -3). If the origin is the mid-point of the base BC, what are the co-ordinates of A and B? **[2021]** **[1 Marks]**

(a) $A(\sqrt{3}, 0)$, $B(0,3)$ (b) $A(\pm 3\sqrt{3}, 0)$, $B(3,0)$

(c) $A(\pm 3\sqrt{3}, 0)$, $B(0,3)$ (d) $A(-\sqrt{3}, 0)$, $B(3,0)$

Q10. The distance of the point (-1, 7) from x-axis is: **[2023]** **[1 Marks]**

(a) -1 (b) 7   (c) 6   (d) $\sqrt{50}$

Q11. The mid-point of the line segment joining the point (-1,3) and $(8, \frac{3}{2})$ is **[2024]** **[1 Marks]**

(a) $\left(\frac{7}{2}, -\frac{3}{4}\right)$ (b) $\left(\frac{7}{2}, \frac{9}{2}\right)$ (c) $\left(\frac{9}{2}, -\frac{3}{4}\right)$ (d) $\left(\frac{7}{2}, \frac{9}{4}\right)$

Q12. The distance between the points (2,-3) and (-2,3) is **[2024]** **[1 Marks]**

(a) $2\sqrt{13}$ Units   (b) 5 units   (c) $13\sqrt{2}$ units   (d) 10 units

Q13. The diameter of a circle is of length 6 cm. If one end of the diameter is (-4,0), the other end on x-axis is at: **[2024]** **[1 Marks]**

(a) (0,2)   (b) (6,0)   (c) (2,0)   (d) (4,0)

Q14. Find the distance of a point $P(x, y)$ from the origin. **[2018]** **[1 Marks]**

Q15. Find the coordinates of a point A, where AB is diameter of a circle whose centre is (2, −3) and B is the point (1, 4). **[2019]** **[1 Marks]**

Q16. Find the ratio in which P (4, m) divides the line segment joining the points A (2, 3) and B (6, −3). Hence find m. **[2018]** **[2 Marks]**

Q17. Find the ratio in which the segment joining the points $(1, -3)$ and $(4, 5)$ is divided by x-axis? Also find the coordinates of this point on x-axis. **[2019]** **[2 Marks]**

Q18. If A (−2, 1), B (a, 0), C (4, b) and D (1, 2) are the vertices of a parallelogram ABCD, find the values of a and b. Hence find the lengths of its sides. **[2018]** **[3 Marks]**

Q19. Find the co-ordinates of the points of trisection of the line segment joining the points (-2, 2) and (7, -4). **[2024]** **[3 Marks]**

Q20. Find the point on y-axis which is equidistant from the points $(5, -2)$ and $(-3, 2)$. **[2019]** **[3 Marks]**

Q21. The line segment joining the points A(2, 1) and B(5,−8) is trisected at the points P and Q such that P is nearer to A. If P also lies on the line given by $2x - y + k = 0$, find the value of k. **[2019]** **[3 Marks]**

Q22. If the point C(-1, 2) divides internally the line segment joining A(2, 5) and B(x, y) in the ratio 3:4, find the coordinates of B. **[2020]** **[3 Marks]**

Q23. Case Study **[2023]** **[4 Marks]**

Jagdish has a field which is in the shape of a right angled trainagle AQC. He wants to leave a space in the form of a square PQRS inside the field for growing wheat and the remaining for growing vegetables (as shown in the figure).In the field, there is a pole marked as O.
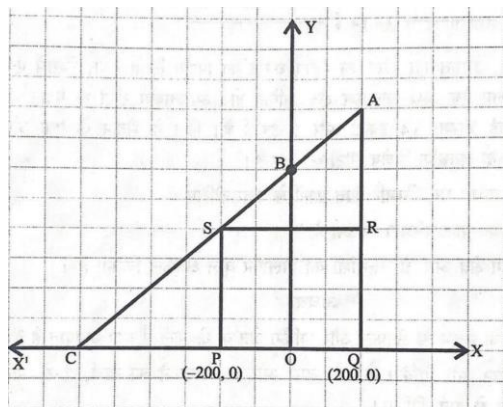
Based on the above information, answer the following questions:

(i) Taking O as origin, coordinates of P are (-200, 0) and of Q are (200, 0). PQRS being a square, what are the coordinates of R and S?

(ii) (a) What is the area of square PQRS?

<div align="center">**OR**</div>

(b) What is the length of diagonal PR in square PQRS?

(iii) If S divides CA in the ratio K : 1, what is the value of K, where point A is (200, 800)?