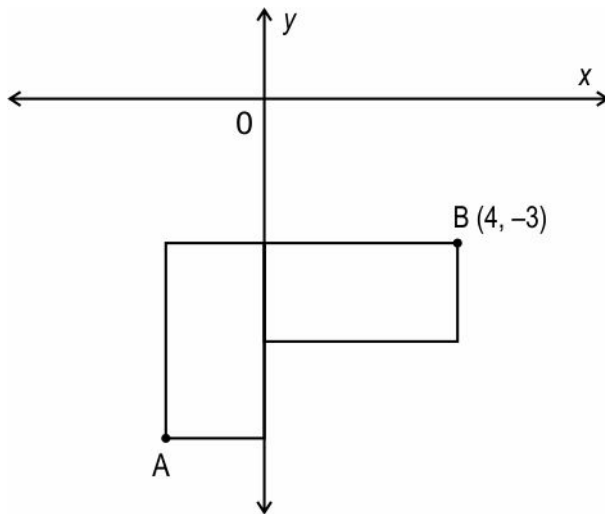# Coordinate Geometry

Multiple Choice Questions

Q: 1 Shown below are 2 identical rectangles such that their breadth is half their length.

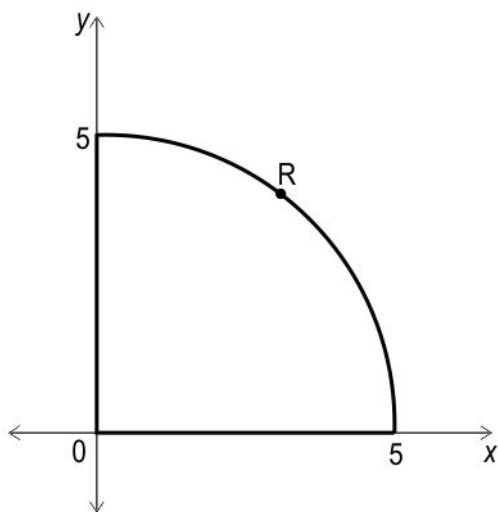What are the coordinates of point A?

1 (4, -5)　　　　　**2** (-4, -6)　　　　　**3** (-2, -7)　　　　　**4** (-2, -9)

Free Response Questions

Q: 2 Shown below is a quarter of a circle with centre at (0, 0). An arbitrary point R lies on the boundary of the quadrant. **[1]**

Write one possible pair of coordinates of point R.

Q: 3 A circle has its centre at the origin. The radius of the circle is 5 units. [1]
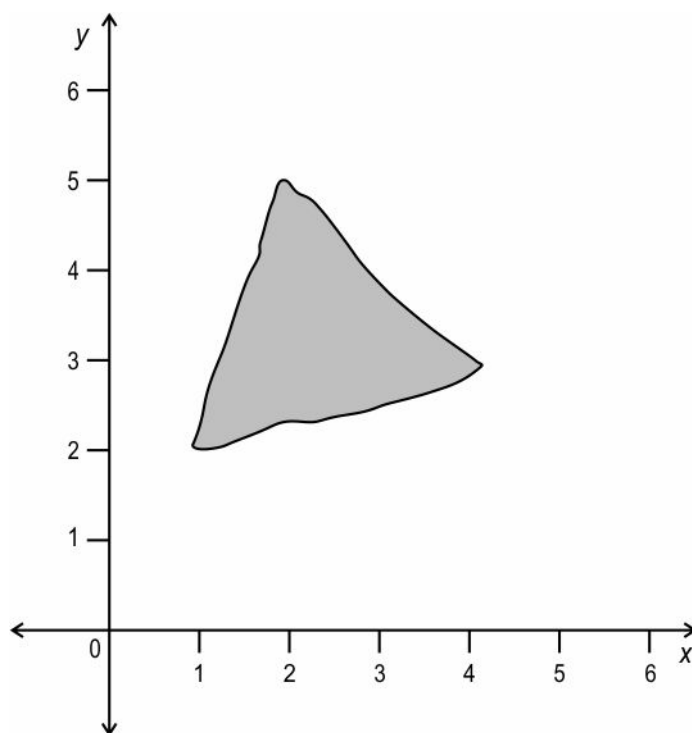
Does the point (3, -5) lie inside the circle, on its circumference or outside the circle? Show your work.

Q: 4 Arshad was eating chips while working with graph paper. One chip fell on his graph paper as shown below. [2]

Out of curiosity, he tried estimating the area of his chip.

What is the approximate area occupied by the chip? Show your work.

Shown below is the map of India put on a coordinate plane where each small square represents 1 sq unit. **[5]**

Alok has to travel from his home at point (0, 5) in Uttar Pradesh to point M(-6,-7) in Telangana. Assume that his travels happen in the shortest straight path.

i) Find the approximate distance he travels from his home to reach point M in Telangana.

ii) He plans to take 2 stops in his journey such that their journey is divided into 3 equal parts. Find the coordinates of his stops and the corresponding state.

Show your work.

Q.No	Correct Answers
1	3

Q.No	What to look for	Marks
2	Identifies the radius of the quadrant as 5 units, assumes the coordinates of point P as (x, y) and uses the distance formula to write: $x^2 + y^2 = 25$	0.5
	Writes one possible pair satisfying the above equation. For example, (3, 4).	0.5
3	Finds the distance of the point (3, -5) from the origin as: $\sqrt{\{3^2 + (-5)^2\}} = \sqrt{34}$ units	0.5
	Writes that since $\sqrt{34} > 5$, the point (3, -5) lies outside the circle.	0.5
4	Considers the coordinates of the triangular chip as (1, 2), (4, 3) and (2, 5).	0.5
	Writes the expression to estimate the area of the chip as $\frac{1}{2}$ [(3 - 5) + 4(5 - 2) + 2(2 - 3)].	1
	Evaluates the above expression and finds the approximate area occupied by the chip as 4 square units.	0.5
5	i) Finds the distance from his home to point (-6, -7) in Telangana as: $\sqrt{\{(-6 - 0)^2 + (-7 - 5)^2\}} = \sqrt{180}$ units	1
	ii) Finds the first stop by taking the ratio 1:2 and using section formula as: ($\frac{0-6}{3}$, $\frac{10-7}{3}$) = (-2, 1)	1.5
	Locates the point (-2, 1) and identifies the corresponding state as Chattisgarh.	0.5
	Finds the second stop by using the midpoint formula as: ($\frac{-2-6}{2}$, $\frac{1-7}{2}$) = (-4, -3) (Award full marks if the section formula is used using the ratio 2:1.)	1.5

Q.No	What to look for	Marks
	Locates the point (-4, -3) and identifies the corresponding state as Telangana.	0.5