

Conic Section: Parabola - Class XI

Past Year JEE Questions

Questions

Question: 01

If the area of the triangle whose one vertex is at the vertex of the parabola, $y^2 + 4(x - a^2) = 0$ and the other two vertices are the points of intersection of the parabola and y-axis, is 250 sq. units, then a value of 'a' is

- A. $5\sqrt{5}$
- B. $(10)^{2/5}$
- C. $5(2^{1/3})$
- D. 5

Solutions

Solution: 01

Explanation

Vertex is $(a^2, 0)$

$$y^2 = -(x - a^2) \text{ and } x = 0 \Rightarrow (0, \pm 2a)$$

$$\text{Area of triangle is } = \frac{1}{2} \cdot 4a \cdot (a^2) = 250$$

$$\Rightarrow a^3 = 125 \text{ or } a = 5$$