

Matrices - Class XII

Past Year JEE Questions

Questions

Question: 01

A circle passes through the points (2, 3) and (4, 5). If its centre lies on the line, $y - 4x + 3 = 0$, then its radius is equal to :

- A. 2
- B. $\sqrt{5}$
- C. $\sqrt{2}$
- D. 1

Solutions

Solution: 01

Explanation

Equation of the line passing through the points (2, 3) and (4, 5) is

$$y - 3 = \left(\frac{5-3}{4-2}\right) x - 2 \Rightarrow x - y + 1 = 0 \dots (1)$$

Equation of the perpendicular line passing the midpoint (3, 4) is $x + y - 7 = 0 \dots (2)$

Lines (1) and (2) intersect at the center of the circle .
So, the center of the circle is (3, 4)

Therefore, the radius is

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(2 - 3)^2 + (3 - 4)^2} = \sqrt{2} \text{ units.}$$