

Hyperbola - Class XI

Past Year JEE Questions

Questions

Question: 01

If $5x + 9 = 0$ is the directrix of the hyperbola $16x^2 - 9y^2 = 144$, then its corresponding focus is :

- A. $(\frac{5}{3}, 0)$
- B. $(5, 0)$
- C. $(-5, 0)$
- D. $(-\frac{5}{3}, 0)$

Solutions

Solution: 01

Explanation

$$\frac{x^2}{9} - \frac{y^2}{16} = 1$$

$$\therefore a = 3 \text{ and } b = 4$$

$$e^2 = 1 + \frac{b^2}{a^2}$$

$$\Rightarrow e^2 = 1 + \frac{16}{9}$$

$$\Rightarrow e = \frac{5}{3}$$

$$\therefore \text{focus is } (-ae, 0) = (-5, 0)$$