

Hyperbola - Class XI

Related Questions with Solutions

Questions

Question: 01

The equation of the transverse axis of the hyperbola $(x - 3)^2 + (y + 1)^2 = (4x + 3y)^2$ is

- A. $x + 3y = 0$
- B. $4x + 3y = 9$
- C. $3x - 4y = 3$
- D. $4x + 3y = 0$

Solutions

Solution: 01

$$[x - 3]^2 + [y + 1]^2 = [4x + 3y]^2$$

$$\Rightarrow (x - 3)^2 + (y + 1)^2 = 25 \left(\frac{4x + 3y}{5} \right)^2$$

$$\Rightarrow PS = 5PM$$

$$\Rightarrow \text{directrix is } 4x + 3y = 0 \text{ and focus } [3, -1]$$

So equation of transverse axis is $y + 1 = \frac{3}{4}(x - 3)$

$$\Rightarrow 3x - 4y = 13$$

Correct Options

Answer:01

Correct Options: C