

Conic Section: Parabola - Class XI

Past Year JEE Questions

Questions

Question: 01

The locus of the mid points of the chords of the hyperbola $x^2 - y^2 = 4$, which touch the parabola $y^2 = 8x$, is :

A. $y^3(x - 2) = x^2$

B. $x^3(x - 2) = y^2$

C. $y^2(x - 2) = x^3$

D. $x^2(x - 2) = y^3$

Solutions

Solution: 01

Explanation

$$T = S_1$$

$$xh - yk = h^2 - k^2$$

$$y = \frac{xh}{k} - \frac{(h^2 - k^2)}{k}$$

this touches $y^2 = 8x$ then $c = \frac{a}{m}$

$$\left(\frac{k^2 - h^2}{k}\right) = \frac{2k}{h}$$

$$2y^2 = x(y^2 - x^2)$$

$$y^2(x - 2) = x^3$$