

MHT CET 2024 PCM May 3 Shift 2 Question Paper

If $y = \sec(\tan^{-1}x)$ then $\frac{dy}{dx}$ at $x = 1$

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

1.

If $y = \log\left[e^{3x} \left(\frac{x-4}{x+3}\right)^{\frac{2}{3}}\right]$ then find $\frac{dy}{dx}$

2.

3. Find the differential equation of the family of all circles, whose centre lies on x-axis and touches the y-axis at the origin.

3.

4. If $f(x) = 3x + 6$, $g(x) = 4x + k$ and $\underline{f \circ g(x)} = \underline{g \circ f(x)}$ then $k = ?$

4.

5.

$$\int \frac{2x^2 - 1}{(x^2 + 4)(x^2 - 5)} dx =$$

