King Fahd University of Petroleum and Minerals Department of Mathematics and Statistics Math 101 (132) - Quiz 4

Name:

ID:

Serial No.:

1. If $f(t) = 3^{\log_2 t}$, then find f'(t).

2. The line that is normal to the curve $x^2 + 2xy - 3y^2 = 0$ at (1, 1) intersects the curve at what other point?

3. If $y = x^{\sin^{-1}(x)} + e^{3x^2+1} + 6x^6$, then find y'

4. If
$$y = \cot^{-1}\left(\frac{1+x}{1-x}\right)$$
, then $\frac{dy}{dx} =$

5. If
$$f(x) = \frac{\sqrt[3]{3x-2}}{e^{x^2}(x^3+1)^{10}}$$
, then find $f'(1)$

6. Find
$$\lim_{n \to \infty} \left(1 + \frac{3x}{2n} \right)^n$$