

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101 (142) Sec 10 - Quiz 6

Name:

ID:

Serial No.:

1. If Newton's Method is used to estimate the x -coordinate of the point of intersection of the curves $y = \cos(x + \pi)$ and $y = \ln(2x + 1)$ with $x_0 = 0$, then find the value of x_1 .

2. Evaluate $\lim_{x \rightarrow \infty} (1 + 3x)^{\frac{1}{3 \ln x}}$

3. Evaluate $\int \frac{1}{x} \left(\frac{3}{x} + \frac{x}{3} \right)^2 dx$

4. The sum of two nonnegative numbers is 33. If p is the product of one of the numbers and the square root of the other. Then find the largest possible value of p .

5. Discuss the concavity and find the inflection point(s) of $f(x) = \frac{e^{3x}}{e^{3x} + 1}$

6.

7. Find $\lim_{x \rightarrow 0} \frac{\sin 4x - 4x - x^2}{1 - \cos 2x}$