

Circle One:

Name: _____

11:00-11:55 (325)

3:30-4:20 (333)

Math211-2, Fall 2007

Quiz #3: 09-26-07

No Calculators. There are four problems.

1. (2 Points) Solve $e^{3\ln x} = 8$ for x .

2. (2 Points)

a. What is the definition of the derivative?

b. Use the definition of the derivative to find $f'(x)$ where $f(x) = x^2$.

3. (3 Points) Find the equation of the tangent line to the graph of $y = \frac{1}{2}x^2 + \frac{1}{x^2}$ when $x = -1$. (Note: You may use derivative rules to solve this problem).

4. (3 Points) Wisconsin's quarterback Tyler Donovan throws a longball to receiver Luke Swan. Suppose the vertical height y (feet) of the ball can be modeled with

$$y(t) = -4t^2 + 16t + 5$$

where t is the number of seconds the ball has been in the air. Find the vertical height and speed of the ball at the end of 3 seconds. Is the ball is on its way up or down?