

Math 251 Fall 2017

Quiz #4, October 3rd

Name: \_\_\_\_\_

There are 25 points possible on this quiz. This is a closed book quiz. Calculators and notes are not allowed. **Please show all of your work!** If you have any questions, please raise your hand.

Exercise 1. (5 pts.) Find the derivatives of the following functions.

(a)  $g(x) = \frac{2}{x^5}$

(b)  $y = x^e$

(c)  $f(x) = e^3$

Exercise 2. (3 pts.) Differentiate the function  $H(u) = (2u - 5)(u + 3)$ . Simplify your derivative.

Exercise 3. (4 pts.) Differentiate the function  $y = \frac{5 + 4x + x^3}{\sqrt{x}}$ . Simplify your derivative.

*Exercise 4.* (5 pts.) Where is the tangent line to  $y = 2e^x - 8x + 1$  parallel to  $4x - y = 1$ ?

*Exercise 5.* (4 pts.) Find the derivative of  $G(x) = \frac{3x^2 + 2}{2x - 1}$ . Simplify your derivative.

*Exercise 6.* (4 pts.) Find the derivative of  $f(x) = 2x^3e^x$ . Simplify your derivative.