Math 157 - Quiz 7

Name _____

October 14, 2015

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Determine the derivative of each function.

   (a) $f(x) = \dfrac{1}{(5x^3 + x^2)^{17}}$

   (b) $y = \ln(x - e^{-x})$

2. (2 points) Find an equation of the line tangent to the graph of $y = (2x + 1)^4$ at the point where $x = 0$.

3. (2 points) Suppose f is a differentiable function with the properties that $f(1) = 5$ and $f'(1) = -3$. Compute the derivative of $g(x) = \sqrt{f(x)}$ at $x = 1$.

4. (3 points) Determine the derivative of each function.

   (a) $f(t) = t^2 e^{3-5t}$

   (b) $y = \sqrt{z}\ln(z^2 + 1)$