

Math 157 - Quiz 6

October 5, 2016

Name _____

Score _____

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

1. (4 points) Determine the derivative of each function.

(a) $f(t) = \frac{1}{t} + 7e^{-3t}$

(b) $y = 5x^2 - 8x + 3 - 9 \ln x$

2. (4 points) Find an equation of the line tangent to the graph of $f(x) = 2 + \sqrt[3]{x}$ at the point where $x = 8$.

3. (2 points) A bacteria culture is growing in such a way that after t hours there are $P(t) = 145e^{0.2t}$ bacteria. Find the instantaneous rate of change when $t = 5$. Give units with your answer.