

Math 122 (Section 9) Quiz 10 (take-home) due April 17, 2001 (at start of class)

Name _____

1. (6 points) Find derivatives of each of the following functions. Be sure to use correct variable names and proper terminology when referring to the derivative.

(a) $y = 2t^5 - 2t^3 + 17t - 25$

(b) $q = 3 \ln(r) - 2e^r + 6^r$

(c) $f(x) = \sqrt[3]{x} + \frac{2}{x^5} + \frac{1}{\sqrt{x}}$

2. (2 points) Find the equation of the line tangent to the graph of $f(x) = 5x^2 + 9x + 7$ at $x = 2$.

3. (2 points) On April 12, 1991, 10 rabbits were released in a large field. The population of rabbits from that time on can be approximated by $R(t) = 10(1.62^t)$, where t is measured in years since the rabbits were first released. How many rabbits are in the field today and how rapidly is the population changing?