

Math 148 Quiz #3
July 13, 2010

Name: _____

Show all work and answers on a separate sheet with a box around your final answer. Calculators are permitted.

1. The balance (in dollars) of a bank account is given by $B = 1500(1.08)^t$ at year t .
 - (a) (1 pt.) What is the initial balance of the account? (Balance at time 0.)
 - (b) (5 pts.) Find $B'(10)$. Include units on your answer.
 - (c) (2 pts.) Interpret your value of $B'(10)$ in terms of money in the account.

2. Find the derivative of each of the following functions. Simplify your answers if possible.
 - (a) (3 pts.) $g(x) = 12e^{0.5x} - \ln(9x) + 3.1x$
 - (b) (3 pts.) $h(p) = \sqrt[3]{p^5 + p}$

3. Suppose the cost for producing q **thousand** cars is given by $C(q) = 100(q - 5)^3 + 500,000$.
 - (a) (1 pt.) Find the fixed cost for the company.
 - (b) (5 pts.) Find the marginal cost at 1500 cars by using derivatives.

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