Quiz 3A, Math 152

Name: _____

1. Let $f(x) = -3x + 6 \ln x$.

    (a) What is the domain of f?

    (b) Use calculus to find all <u>local</u> maximums or minimums.

2. The average energy consumption of a dishwasher is approximately

$$E(t) = 700e^{-0.5t} + 50 \qquad\qquad (0 \leq t \leq 8)$$

kilowatt-hours per year, where t is measured in years with $t = 0$ corresponding to 1999. For the given time interval, is average energy consumption increasing or decreasing? Use calculus to explain your answer.

3. Solve for x. Round your final answer to one decimal place (i.e. the tenths place).

$$20 - e^{0.32x} = 5$$