## Quiz 8

Dec. 12, 2007

1. ( 10 pts ) An automobile dealer is selling cars at a price of $\$ 22,000$. The demand function is $D(p)=2(30-0.001 p)^{2}$, where $p$ is the price of a car. Should the dealer raise or lower the price to increase the revenue? What is the price that makes the maximum revenue? (Revenue function: $R(p)=p \cdot D(p)$ )
2. ( 10 pts ) For a small company spending $\$ x$ thousand per year in advertising, suppose that annual sales in thousands of dollars equal $s(x)=80-20 e^{-0.04 x}$. If the current advertising budget is $x=40$ and the budget is increasing at a rate of $\$ 1500$ per year, find the rate of change of sales.
