

Workshop #7 (November 6th, 2008)

Note: TURN IN YOUR MAPLE WORK.

1. Bob's Discount Golfcart Warehouse has recorded the following demand quantity/price information:

Price	\$4,500	\$2,500	\$2,000	\$1,750
Quantity	106	527	985	1,446
Elasticity	XXXXXX			

- (a) Compute elasticities and fill in the table.
 (b) Suppose Bob's current golf cart price is \$1,750. If he is trying to maximize his revenue, should he raise or lower his price? (Use elasticity to determine your answer.)

- (c) Graph the price and quantity data in Excel and add a logarithmic trendline. What formula did you get?

$$p(q) =$$

- (d) Using the demand formula from part (c), find a formula to predict Bob's revenue.

$$R(q) =$$

- (e) Using Maple, plot the predicted revenue.
 How many golf carts should Bob sell in order to maximize his revenue?

- (f) What price should maximize Bob's revenue?

- (g) Using your demand function from part (c), compute the **point** elasticity if the price is \$800.

2. Use Excel's "Solver" to find positive constants a , b , and c so that the curve $y = a + bx^2e^{-cx}$ passes close to the points $(x, y) = (1, 2.5)$, $(2, 5.4)$, $(3, 8.32)$, and $(4, 10.64)$.

Hint: Use the initial values $a = b = 1$ and $c = 0.1$. In addition, don't forget to use the Solver option "Assume Non-Negative".

$$a =$$

$$b =$$

$$c =$$

Please describe how you found your answer.