Quiz # 10   Name: _____ Key _____

You must show your work to get full credit.

1. Let $C(q)$ be the cost of producing q items. Assume
$$C(300) = \$943.00, \quad \text{and} \quad C'(300) = 1.40 \text{ dolars/item}$$

(a) Estimate the total cost of producing 303 items.   Cost is _____ $947.20 _____

$$C(302) \approx C(300) + C'(300)(302 - 300)$$
$$= 943 + (1.4)(3)$$
$$= 947.2$$

(b) Estimate the total cost of producing 298 items.   Cost is _____ $940.20 _____

$$C(298) \approx C(300) + C'(300)(298 - 300)$$
$$= 943 + (1.4)(-2)$$
$$= 940.2$$

2. A company makes tee shirts for a roll band to sell at concerts. They are currently making 500 shirts for each concert. The marginal cost and revenue of doing this is $C'(500) = .65$ and $R'(500) = .58$

(a) What is the profit in making producing the 501-st tee shirt.

This is the marginal profit which is   Marginal profit is _____ $-.07$ _____

the marginal revenue — marginal cost
$$= R'(500) - C'(500)$$
$$= .58 - .64 = -.07$$

(b) Should the company increasing or decrease production from 500 tee shirts. Write at least one complete sentence explaining your answer.

From part (a) of this problem we see that producing the 501st tee shit gives a loss of 7¢. So profit is increased by decreasing production.