KING FAHD UNIVERSITY OF PETROLUEM & MINERALS
Math 131 Term 042
Quiz #1 Section: 4(a)

Name: ***ID:*** ***Serial:***

Q1Suppose that the total costs of a product is \$40,000 and the cost per unit is \$10. If the producer sells this product for \$15 per unit, then find the minimum number of units that he should sell so that he will have a profit?

Solution:

Let **x** be the number of units that he will sell. Then:

$$\text{Profit} = TR - TC = 15x - (40,000 + 10x)$$
$$= 15x - 40,000 - 10x$$
$$= 5x - 40,000 > 0$$

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$$x > 8,000$$

Therefore, he should sell at least 8,001 units, so that he will have a profit

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Q2. Suppose that the producer will sell 120 units of a product if the price is \$15 per unit and he will sell 200 units if the price is \$35 per unit. Then find:

a. The supply function assuming that it is linear.
b. The quantity that the producer will sell if the price is \$20 per unit?

Solution:

a. $m = (35-15)/(200-120) = 1/4$

Then the supply function is given by:

$$p - 35 = (1/4)(q - 200)$$

which implies that

$$p = (1/4)q - 15$$

b. $p = 20 = (1/4)q - 15$

implies that $q = (4)(20+15) = 140$