

Quiz 1 , MTH 101, Spring 2015

Ayman Badawi

QUESTION 1. Given x is number of items in hundreds. The selling price per item is 12 Dhs if 400 items are bought. The selling-price per item is 10 Dhs if 800 items are bought. For the same product, the supply-price equation is $p = 0.5x + 2$.

(i) Find the demand-price equation (of course we assume it is LINEAR EQUATION).

(ii) Find the equilibrium point.

(iii) Sketch both graphs and locate the equilibrium point.

(iv) Write a recommendation statement using the available data as in the question.

Faculty information

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Quiz 2 , MTH 101, Spring 2015

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QUESTION 1. Given x is number of items in hundreds. The selling price per item is $p = -0.5x + 20$ in Dhs. For the same product, the supply-price equation per item (cost per item) is $p = 0.5x + 2$.

- (i) Find the revenue function $R(x)$, total cost function $C(x)$, and the total profit function $P(x)$, all in hundreds of Dhs.
- (ii) How many items produce maximum profit? Then find the maximum profit.
- (iii) Find the break-even values (i.e., find number of items where profit = 0).
- (iv) Let n be number of items. If a profit occurs only when $a < n < b$. Find the values of a, b .
- (v) Find the marginal profit when number of item is 700? What does the answer mean?

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Quiz 3 , MTH 101, Spring 2015

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QUESTION 1. Given x is number of items of a particular product. Base-charge is 6Dhs. $C(x)$ is the total cost of x items. Given the cost per item is 2 dhs if number of items ≤ 10 , and cost per item is 1.5 dhs if number of items > 10 . Write down the total cost function, then sketch the graph. What is the total cost of 20 items?

QUESTION 2. 10,000 DHS deposited in a bank that gives interest rate 6% per year, compounded monthly.

(i) Find the amount of money in your account at the end of the 30th month.

(ii) How long will it take in order to double your money?

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Quiz 5 , MTH 101, Spring 2015

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QUESTION 1. You bought a car for 144,000 *AED*. Assume that you made 10% down payment and then you decided to finance the remaining amount by making monthly payment for the next 4 years to a bank that has annual interest rate 3% compounded monthly.

(i) How much money will you pay every month?

(ii) How much money will remain after the third year?

(iii) How much interest will the bank earn during the third year?

(iv) How much interest will the bank earn over the four years period (i.e. total interest in 4 years)?

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QUESTION 1. You bought a car for 144,000 *AED*. Assume that you made 10% down payment and then you decided to finance the remaining amount by making monthly payment for the next 4 years to a bank that has annual interest rate 3% compounded monthly.

(i) How much money will you pay every month?

(ii) How much money will remain unpaid after the third year?

(iii) How much interest will the bank earn during the third year?

(iv) How much interest will the bank earn over the four years period (i.e. total interest in 4 years)?

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Quiz 6 , MTH 101, Spring 2015

Ayman Badawi

QUESTION 1. Solve for x, y using cramer:

$$5x + 7y = 3$$

$$-2x + 4y = 1$$

QUESTION 2. Solve by elimination:

$$3x + 2y = 8$$

$$-6x + 6y = 14$$

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Quiz 7 , MTH 101, Spring 2015

Ayman Badawi

QUESTION 1. At least 600 grams of strawberries and at most 1000 grams of Kiwi are available to make up cups of yogurt. A regular cup of yogurt has 2 grams of strawberries and 2 grams of kiwi. King-size cup of yogurt has 4 grams of strawberries and 4 grams of kiwi. Given that number of regular yogurt cups must be at most 200 cups. If the profit on each regular yogurt cup is 2 DHS and the profit on each king-size yogurt cup is 2.5 DHS, how many cups of each kind should be made to maximize the profit? **SHOW THE WORK**

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Quiz 8 , MTH 101, Spring 2015

Ayman Badawi

QUESTION 1. Eggs are coming in packs. A regular pack has four eggs and each pack costs 5 DHS. A large pack contains 6 eggs and each pack costs 7 DHS. You need to buy EXACTLY 40 eggs. How many packs of each type should you buy to minimize the cost? Show the work

QUESTION 2. Solve for x, y, z

$$x + y + z = 5$$

$$-2x - y - 2z = -9$$

$$4x + 4y + 5z = 23$$

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Quiz 9 , MTH 101, Spring 2015

Ayman Badawi

QUESTION 1. Maximize $P = 40x_1 + 80x_2 + 30x_3$ subject to

$$x_2 + 0.5x_3 \leq 100$$

$$x_1 + x_2 + x_3 \leq 200$$

$$x_1 + x_3 \leq 120$$

$$(x_1, x_2, x_3 \geq 0)$$

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