Boston College
Problem Set 5, Fall 2012
EC 131 - Principles of Microeconomics
Instructor: Inacio G L Bo

Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page. Be succinct. Longer answers don't increase your chance of being right, but increase your chance of saying something wrong. **Show how you got your answers in mathematical questions**

Name: ______________________________

1. Say whether the propositions are True or False. If they are False, justify.
   (a) If the marginal cost of producing the tenth unit of output is \$3, and if the average total cost of producing the tenth unit of output is \$2, then at ten units of output, average total cost is rising.

   (b) In competitive markets, firms that raise their prices are typically rewarded with larger profits.

   (c) A firm operating in a perfectly competitive market may earn positive, negative, or zero economic profit in the long run.

2. Consider that the short run (that is, not allowing for change in the amount of capital) production function for burritos at El Pelon is the following:

Hours of Work	Burritos
0	0
1	30
2	55
3	75
4	90
5	100
6	105
7	107

   (a) Does this production function satisfy the diminishing marginal product condition? **Justify**.

   (b) Consider for the following items that the hourly wage at El Pelon is \$10/h, and that the rent is \$50. Fill the table below with the values being asked. For the MPL items, write them it in the line before the change in production (that is, the first value is at the first line, and the last line is left empty):

Hours of Work	Burritos	MPL	FC	VC	TC	AFC	AVC	ATC
0	0					–	–	–
1	30							
2	55							
3	75							
4	90							
5	100							
6	105							
7	107	–						

3. (a) Suppose that the market for energy drink is competitive with price \$5.00 and fill in the table below (for the MR and MC columns, shift the numbers to the row above to fill in here, as you did for the MPL in question 2) :

Quantity	TR	FC	VC	TC	ATC	AVC	Profit	MR	MC
1		\$30	\$2						
2		\$30	\$5						
3		\$30	\$9						
4		\$30	\$14						
5		\$30	\$20						
6		\$30	\$27						
7		\$30	\$35					–	–

(b) How many units of energy drink will a firm produce in this market? **Justify**

(c) How much profit will a firm have in this market?? Will they shut down in the short run? Will they exit in the long run? **Justify**

4. Suppose that the cost for the production for Domino's Pizzas (where pizza is a competitive market) is given by the following function:

$$C(Q) = 40 + 3Q + 0.5Q^2$$

   (a) What is the fixed cost for the production of pizzas?

   (b) Provide the expressions for the marginal cost (MC), average total cost (ATC), the average fixed cost (AFC) and for the average variable cost (AVC)

(c) Suppose that the market price for pizza is \$13. How many pizzas will Domino's produce?

(d) What will be Domino's profit? Will they shlut down in the short run? Will they exit in the long run? **Justify**

(e) Given the profit maximizing choice and its relation with the average total cost (ATC) and marginal cost (MC), is Domino's producing more or less than the efficient scale?

 End of problem set.