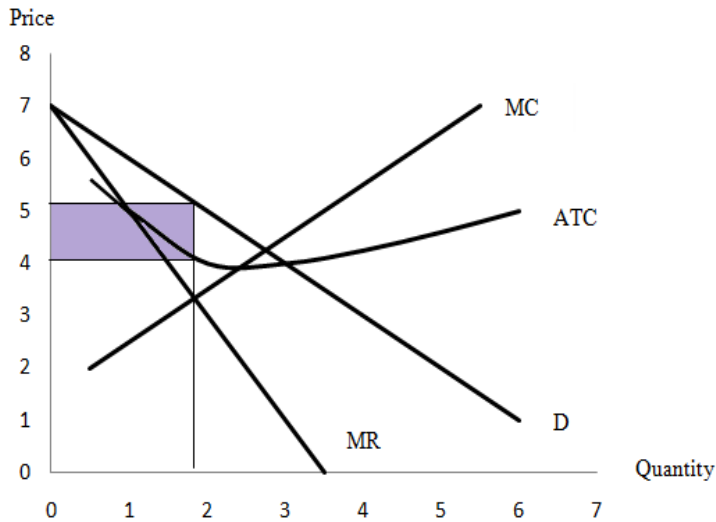# Economics Quiz

Question 1

Price

Figure 11.a.1

Answer the following questions for this monopolistically competitive firm and show your calculations when necessary.

a. What is the profit maximizing price? Output?
In short run, price of monopolistic competitive firm is same as monopoly
The firm maximizes its profits and produces a quantity where the firm's marginal revenue (MR) is equal to its marginal cost (MC). The firm is able to collect a price based on the average revenue (AR) curve. The difference between the firm's average revenue and average cost, multiplied by the quantity sold (Qs), gives the total profit.
Profit maximizing price
Profit maximizing price is 5
Quantity is 2
Total Revenue is 2x 5 = 10

b. For this monopolistic competitive firm, is the firm earning a profit or loss? Explain.
Firm is earning profit as price set by firm is greater than average total cost. Therefore difference between price and average total cost is the profit which firm is making by

selling one unit. In this case, price is 5 while average total cost is 4, hence per unit of quantity sold firm is making a profit of 1

c. What is the average total cost (ATC)?

Average total cost is 4 in this case. Average total cost is equal to total cost divided by the number of goods produced (the output quantity, Q). It is also equal to the sum of variable costs (total variable costs divided by Q) plus average fixed costs (total fixed costs divided by Q).

d. What is the amount of average revenue (AR)?

Average Revenue is 5

e. What is the amount of total revenue? Total costs?

Total revenue is 2x5 = 10

Total cost id 2x4 = 8

f. In comparison to a monopolist, is the elasticity of the demand curve more or less elastic than a monopolistic competitive firm? Explain your answer.

In comparison to a monopolist, the elasticity of the demand curve is more elastic for monopolistic competitive firm. This is primarily because multiple seller are not selling identical but similar products. Therefore, there is higher chance of product substitution. In contrary to it, there are no perfect substitute in case of monopolist

g. Can this monopolistic competitive firm earn a profit in the long-run? Explain your reasoning.

No, firm cannot earn positive economic profit in long run. A firm making profits in the short run will nonetheless only break even in the long run because demand will decrease and average total cost will increase. This means in the long run, a monopolistically competitive firm will make zero economic profit.

Question 2: Multiple Choice Questions--Select the best answer for each question

1. Pure monopoly means:
A) any market in which the demand curve to the firm is down sloping.
B) a standardized product being produced by many firms.
C) a single firm producing a product for which there are no close substitutes.
D) a large number of firms producing a differentiated product.

Answer: C - a single firm producing a product for which there are no close substitutes.

2. A natural monopoly occurs when:
A) long-run average costs decline continuously through the range of

demand.
B)   a firm owns or controls some resource essential to production.
C)   long-run average costs rise continuously as output is increased.
D)   economies of scale are obtained at relatively low levels of output.

Answer: A - long-run average costs decline continuously through the range of
demand.

P	P	P	P
D = MR	MR D	D = MR	MR D
(A)	(B)	(C)	(D)
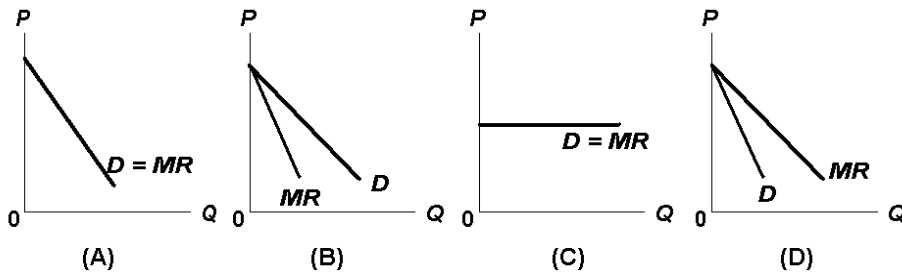
3.   Which of the above diagrams correctly portray a non-discriminating pure monopolist's demand (*D*) and marginal revenue (MR) curves?
A)   A
B)   B
C)   C
D)   D
Answer: A

4.   In the long run a pure monopolist will maximize profits by producing that output at which marginal cost is equal to:
A)   average total cost.
B)   marginal revenue.
C)   average variable cost.
D)   average cost.
Answer: B – Marginal revenue

Total output	Price	Marginal revenue	Average total cost	Marginal cost
1	$100	$100	$100.00	$ 30
2	90	80	63.00	26
3	80	60	52.67	32
4	70	40	49.50	40
5	60	20	49.60	50
6	50	0	50.00	52
7	40	-20	52.29	66
8	30	-40	55.75	80
9	20	-60	60.67	100
10	10	-80	67.60	130

5. Refer to the above data for a non-discriminating monopolist. This firm will maximize its profit by producing:
  A) 3 units.
  B) 4 units.
  C) 5 units.
  D) 6 units.
  Answer: B – 4 units
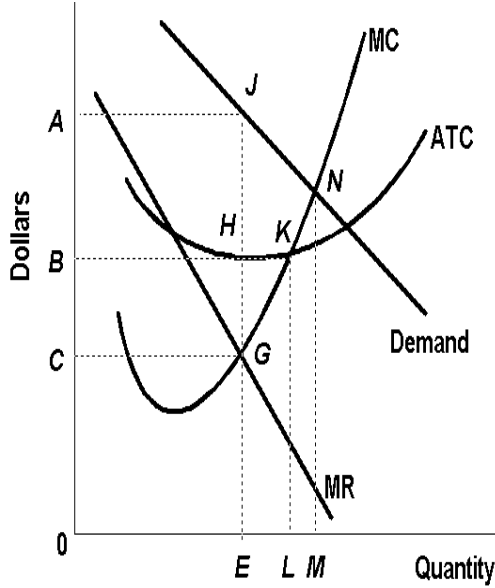
6. Refer to the above diagram. To maximize profits or minimize losses this firm should produce:
  A) *E* units and charge price *C*.
  B) *E* units and charge price *A*.
  C) *M* units and charge price *N*.
  D) *L* units and charge price *LK*.
  Answer: B - *E* units and charge price *A*.

7. Refer to the above diagram. At the profit-maximizing level of output, total revenue will be:
   - A) *NM* times 0*M*.
   - B) 0*AJE*.
   - C) 0*EGC*.
   - D) 0*EHB*.

   Answer: B – 0AJE

8. Refer to the above diagram. At the profit-maximizing level of output, total cost will be:
   - A) *NM* times 0*M*.
   - B) 0*AJE*.
   - C) 0*CGC*.
   - D) 0*BHE*.

   Answer: D – 0BHE

9. Refer to the above diagram. At the profit-maximizing level of output, the firm will realize:
   - A) an economic profit of *ABHJ*.
   - B) an economic profit of *ACGJ*.
   - C) a loss of *GH* per unit.
   - D) a loss of *JH* per unit.

   Answer: A - an economic profit of *ABHJ*
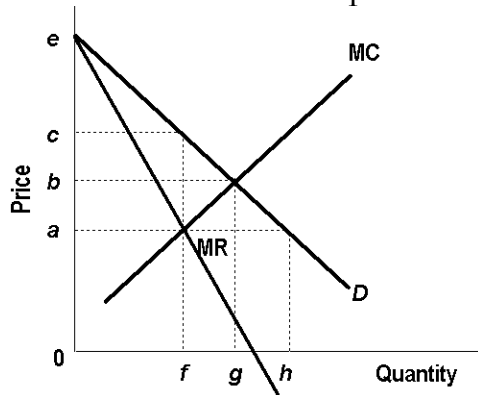
10. Refer to the above diagram for a pure monopolist. Monopoly price will be:
    - A) *e*.
    - B) *c*.
    - C) *b*.
    - D) *a*.

    Answer: B

11. Refer to the above diagram for a pure monopolist. Monopoly output will be:
    - A) between *f* and *g*.
    - B) *h*.

C)   g.
D)   f.

Answer: D

Question 3: The marginal revenue product of labor in a cement factory is $MRP_L = 80 -$ 1.5L, where L = the number of workers at the cement factor. If the wage the cement workers is $15 per hour, then how many workers will the cement factory hire? Show all of your work for credit.

Firms maximize profit when marginal costs equal marginal revenues, and in the labor market this means that firms will hire more employees until the wage rate (marginal cost of labor) equals the MRPL.

$80 - 1.5L = 15$

$1.5 L = 65$

$L = 650/15 = 43.33$

So cement factory will hire 43 workers

Question 4: People decide how to "budget" their time in much the same way that they decide how to budget for different goods. Each person decides how much they "value" their leisure time versus their work time. The more people work, the more they tend to value their remaining leisure time. This is the justification for paying overtime to people working over 40 hours per week.

a. How might we model this trade-off economically using the basic labor supply model by showing the budget line and utility curves or indifference curves? In your graph of the basic labor supply, be sure to identify the optimum point of the budget line and the indifference curve.
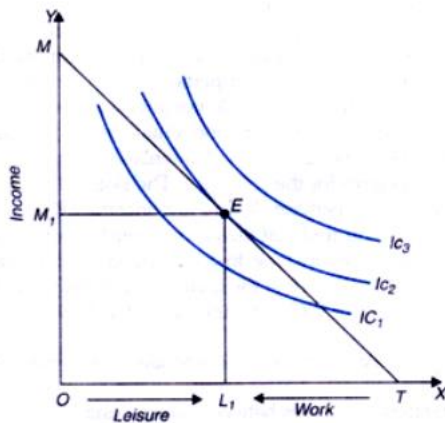
In above figure, the slope of the income-leisure curve OM/OT equals the wage rate. At the wage rate determined above, individuals shall choose a combination of income time and leisure time which is lying on the income-leisure line MT , which in turn maximizes the overall satisfaction of individual made that selection. It can be seen in the diagram shown above that, the income –leisure line is a tangent to indifference curve IC_2 at point E and thereby showing a choice of OL_1 of leisure and OM_1 of income.

Under optimal scenario, trade-off between income and leisure equal the wage rate. In other words MRS between income and leisure equals the market exchange rate between two. Under the said situation, Individuals work for TL_1 hours and in process earn OM_1 amount of income.

b. Suppose that the government imposes a tax on labor. If a tax is imposed on labor, the worker will perceive this tax as a reduction in his or her wage. For every hour worked, the individual worker receives a lower return on his or her labor. Demonstrate the effects of this tax on labor supply using the graph in part a showing a graph of the income effect and the substitution effect. That is, there are two graphs. Summarize the impacts of this tax on labor.

If a tax is imposed on labor income, the workers consider the same as reduction in his effective wage. Therefore, worker would decide either to work for more hours for achieving the desired wage level (income effect)or to work for fewer hours and thus substituting leisure for labor in response to a lower return on labor (substitution effect). Therefore, whether a tax will result in more or less hours worked depends on whether the substitution or income effect is stronger. The graphical representation is shown below:
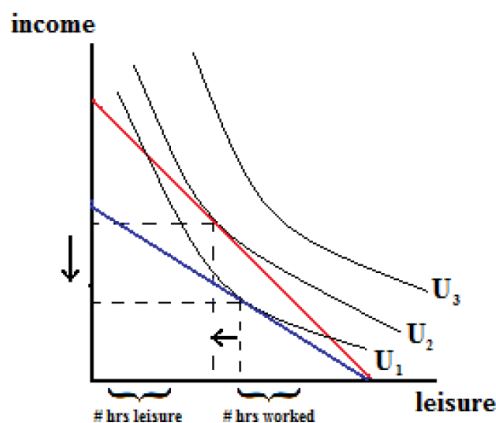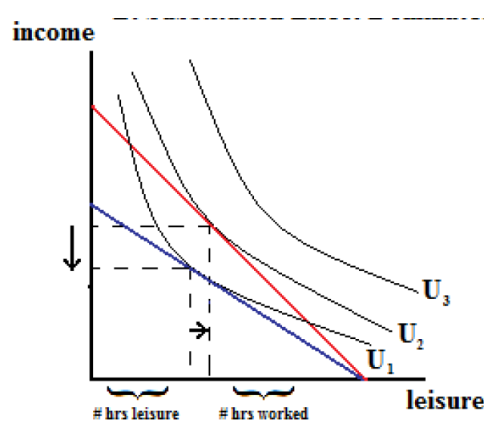

Figure: Income Effect representation

Figure: Substitution Effect representation