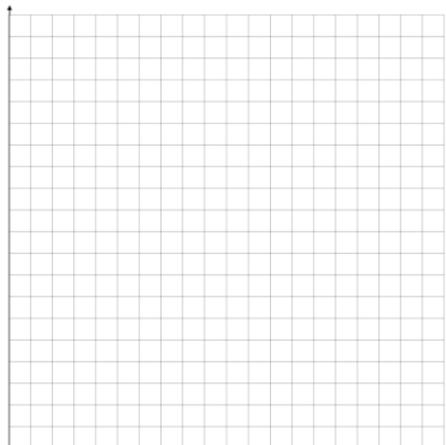


## Econ 101: Problem Set 5

1. For the firm pictured in the table do the following tasks and answer the questions:

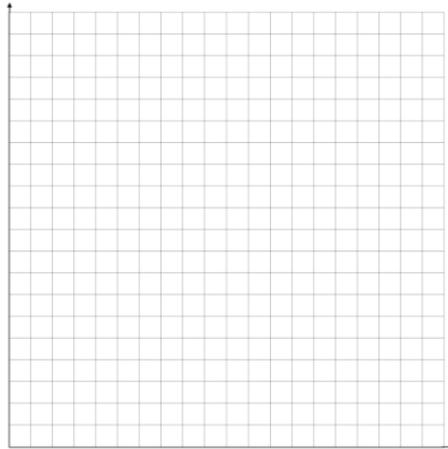
<u>Q</u>	<u>P</u>	<u>TC</u>	<u>TR</u>	<u>MR</u>	<u>MC</u>	<u>AC</u>	<u>TR-TC</u>
0	0	10					
1	90	20					
2	85	40					
3	80	70					
4	75	110					
5	70	160					
6	65	220					
7	60	290					
8	55	370					
9	50	460					
10	45	560					

- (a) Fill in the blanks.
- (b) Find profit maximizing output and price.
- (c) Is the monopoly producing at minimum AC?
- (d) Do you think this is a natural monopoly?
- (e) Show the profit-maximizing solution graphically.
- (f) Suppose the government forces the monopolist to behave as a competitive firm. What would be the new equilibrium price and quantity?
- (g) Suppose the monopolist is forced to get price and quantity equal to that of a competitive industry. Show the new price and quantity. Would the monopolist still be earning profits?

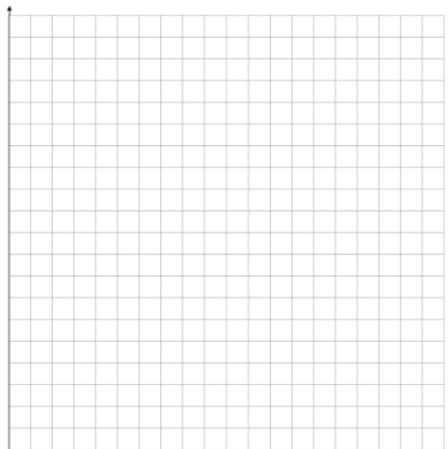


2. On a price-quantity graph, depict a monopolist's demand curve, marginal revenue curve, average cost curve, and marginal cost curve.

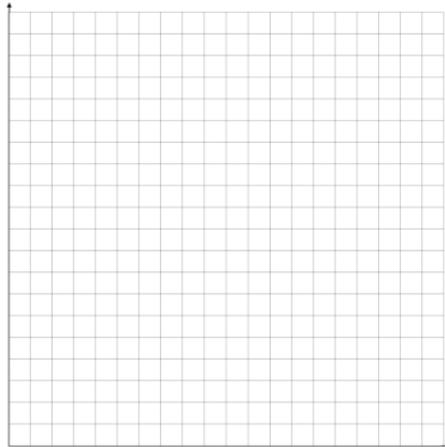
1. Explain why marginal revenue is always less than price.
2. How does the profit-maximizing monopolist determine the quantity to produce and the price to charge? Show the profit maximizing price-quantity combination on your graph.
3. Show total costs, total revenue, and profits on your graph.



3. Does a monopoly allocate resources efficiently? Explain.
4. Explain why a monopolist has no supply curve.
5. How does the monopolist's quantity and price compare with a perfectly competitive industry? Draw graph below and explain. Find  $P^*$  and  $Q^*$  and area of profits.



6. Characterize the monopolistically competitive firm.
7. State the main consequence of product differentiation.
8. Give some examples of monopolistically competitive firms (bars, beauty parlors, etc.).



9. What happens to the demand curve of the monopolistic competitive firm in the long run? (Show in graph above)

1. Does price equal MC in the long run?
2. Is the firm producing at minimum average cost? AC
3. Is the firm operating at optimal capacity?

10. Should the free market be allowed to determine the price for the following, or should government intervene? Defend your choice for each.

- |                       |  |
|-----------------------|--|
| a) Transit fares      | d) Postal delivery of newspapers and magazines |
| b) Plastic surgery    | e) Fire protection for churches                |
| c) Garbage collection | f) Ice cream                                   |

11. The following activities have known harmful effects. In each case identify any divergence between social and private costs.

- |  |                              |
|--|------------------------------|
| a) Cigarette smoking   | c) Private ownership of guns |
| b) Driving a car at the national (rural) speed limit of 65 mph | d) Drilling for offshore oil |

12. What market failure(s) does public support of higher education seek to remedy? How would you go about evaluating whether the benefits of this support outweigh the costs?

13. The president of Goodyear Tire and Rubber Company complained that government regulation had imposed \$30 million per year in "unproductive costs" on his company, as listed below. How would one determine whether these costs were "productive" or "unproductive?"

- |  |  |
|--|--|
| a) Environmental regulation, \$17 million      | c) Motor vehicle safety, \$3 million         |
| b) Occupational safety and health, \$3 million | d) Personnel and administration, \$3 million |