

Practice Problems: Perfectly Competitive Markets and Monopolies

Updated: Spring 2012

Firms in Competitive Markets

1. Does a firm's price equal marginal cost in the short run, in the long run, or both? Explain.
2. What should a perfectly competitive firm's profits be in the long run and why? Explain in words and with graphs.
3. Does a firm's price equal the minimum of average total cost in the short run, in the long run, or both? Explain.
4. Draw the cost curves for a typical firm.
 - a. For a given price, explain how the firm chooses the level of output that maximizes profit.
 - b. Show a case where they earn a positive profit, zero profit, and a negative profit (a loss).
 - c. By looking at each of the three cases, can you tell whether the firm is operating in the short or long-run?
5. Under what conditions will a firm exit a market? Explain.
6. The licorice industry is competitive. Each firm produces 2 million strings of licorice per year. The strings have an average total cost of \$0.20 each, and they sell for \$0.30.
 - a. What is the marginal cost of a string?
 - b. Is this industry in the long-run equilibrium? Why or why not?
7. Consider the following total cost and total revenue given in the table below:

Quantity	0	1	2	3	4	5	6	7
Total Cost	\$8	\$9	\$10	\$11	\$13	\$19	\$27	\$37
Total Revenue	0	8	16	24	32	40	48	56

- a. Calculate marginal revenue and marginal cost for each quantity.
- b. What is the condition for profit maximization? Explain it.
- c. How much should this firm produce to maximize profits?
- d. What are profits at this profit maximizing quantity?
- e. Is this firm in a competitive market or not? Explain.
- f. Is this firm in the short-run or long-run equilibrium? Explain.
- g. Will firms be entering or exiting this market? Explain.

8. Suppose the textbook industry is perfectly competitive and in long-run equilibrium. Due to an abundance of bad economics professors, demand for economics classes falls.
 - a. Show the effects of this in a basic supply and demand diagram.
 - b. Show the effects of this on the firms in this market. Be sure to label short-run and long-run graphs, profits/losses and explain your analysis.

Monopolies

9. What is the key difference between a competitive firm and a monopolistic one and what are the main implications of this?
10. What is the basic condition for profit maximization for a monopoly? How is this different than the perfectly competitive firm's condition?
11. Draw a basic profit maximization graph for a monopoly. Be sure to include the demand curve, marginal revenue curve, and marginal cost curve. Label the monopolist's price, quantity and profits.
12. Redraw your graph from question (11). Suppose that the market is not monopolistic, but perfectly competitive instead. If all the competitive firms have the same cost structure then the MC curve becomes the supply curve.
 - a. In your graph compare the prices and quantities between the monopolist and the perfectly competitive firms. Explain in word.
 - b. Suppose the market is in its long-run equilibrium. Draw the ATC curve for the perfectly competitive industry. Use that ATC to show that the monopolist would earn positive profits.
13. Discuss why barriers to entry are so important to a monopolist and give an example of such a barrier. If a monopolist could buy a barrier to entry, what is the most it would be willing to pay?
14. When might we tolerate and even encourage monopolies?

Monopoly

15. What is the basic condition for profit maximization for a monopoly? How is this different than the perfectly competitive firm's condition?
16. Briefly list the differences between a monopolistic and a perfectly competitive market. Be sure to include, P, Q & Profits.
17. What is the key difference between a competitive firm and a monopolistic one and what are the main implications of this?
18. Draw a basic profit maximization graph for a monopoly. Be sure to include the demand curve, marginal revenue curve, average total cost curve, and marginal cost curve. Label the monopolist's price, quantity and profits.
19. When might we tolerate and even encourage monopolies?
20. Why would a monopolist be interested in erecting or maintaining existing barriers to entry? How much would the monopolist be willing to pay for these barriers? Explain.