Chapter 14 Review

Readings  Chapter 14, all

Outline

I. Classifying Industry Structures
   A. # of firms
   B. Type of product
   C. A & B ⇒ degree of control over price
   D. Entry (& exit) barriers
   E. A ⇒ gamemanship?

II. Demand Faced by an Individual Purely Competitive Firm
   A. Price take or Price maker?
   B. The demand curve faced by a purely competitive firm
   C. Price and marginal revenue (MR)

III. How Much to Produce (if you produce) in the Short-Run
   A. Max TR – TC
   B. π-max rule
   C. Short-run shut down rule
   D. Long-run shut down rule
   E. The short-run supply curve for a PC firm

IV. PC in the long-run
   A. Economic profits
      (graph with one ATC)
   B. Costs (choice of plant size)
      (graph with multiple ATCs)

V. What’s Good about Pure Competition?
   A. Economic profits (?)
   B. Pricing and output
   C. PC and efficient scale

Text and Study Guide Questions

Questions for Review (from the text)
   all

Problems and Applications (from the text)
   all but 11 and 14 (12 is pretty hard. I really like # 7.)
Other Problems

1. Fill in blank cells in the table below for a firm manufacturing and selling wood canoes.

<table>
<thead>
<tr>
<th>Output per week</th>
<th>Total Costs</th>
<th>MC</th>
<th>Average Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FC</td>
<td>VC</td>
<td>TC</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>1</td>
<td>$300</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>2</td>
<td>$700</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>3</td>
<td>$1,200</td>
<td>$2,200</td>
<td>N.A.</td>
</tr>
<tr>
<td>4</td>
<td>$1,800</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

- Assume the firm is a price taker and the market price is $522. How many canoes should this firm produce (assuming it should produce)? ______________ Is the firm covering its variable costs? ______________ Should the firm produce or shut-down in the short-run? ______________________________? (produce, shut down)

- Assume the firm is a price taker and the market price is $322. How many canoes should this firm produce (assuming it should produce)? ______________ Is the firm covering its variable costs? ______________ Should the firm produce or shut-down in the short-run? ______________________________? (produce, shut down)

2. A firm in a purely competitive industry is selling 1,000 units for $12 (i.e. Price = $12). What is the marginal revenue of the 1,000th unit? (You can use =, <, or > in your answer if needed.) ________________
3. Fill in the chart below with the characteristic of each industry type.

<table>
<thead>
<tr>
<th>Industry type</th>
<th># of firms</th>
<th>type of product</th>
<th>control over price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monopolistic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perfect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monopoly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligopoly</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Choose from these → (one, few, many) (identical, differentiated, either) (price taker, price maker)

4. Fill in the blanks with the correct industry type.

Easiest to Enter: ________________________________

2nd Easiest to Enter: ________________________________

3rd Easiest to Enter: ________________________________

Hardest to Enter: ________________________________

5. Paul has a new job paying $1,520 plus some money for gas to drive to work. He needs a car to get to this job. If he takes a job he can walk to, it will pay $1,200. On October 20th ‘97, Paul bought a car. On October 21st ‘97 he wrecked this car beyond repair (i.e. he totaled it) and his insurance policy does not cover the damage. He still has to make payments of $200 per month for the next two years on his now wrecked car. If he buys another car he will have to pay an additional car payment of $200 per making his total car payments $400 a month. What should Paul do? Should he buy another car? Which job should he take? Why? You can assume the jobs are identical in every aspect except the pay and the fact that he needs to drive to the higher paying one.

6. In the short-run, a typical perfectly competitive firm can earn: Check all that apply.

- _________ positive economic profits
- _________ negative economic profits
- _________ zero economic profits

7. In the long-run, a typical perfectly competitive firm can earn: Check all that apply.

- _________ positive economic profits
- _________ negative economic profits
- _________ zero economic profits
8. Answer the questions based on the cost and revenue curves below.

a. Is the firm a perfectly competitive firm? How can you tell?

b. How much should the firm produce if it wants to maximize profits (or minimize losses)?

c. What price should the firm charge if it wants to maximize profits (or minimize losses)?

d. At the above price and quantity, is the firm making economic profits? How can you tell?

e. Should the firm operate or shut-down in the short-run? How can you tell?

f. What is the firm’s level of profits or losses? Indicate this amount on the graph above.
9. Answer the questions based on the cost and revenue curves below.

a. Is the firm a perfectly competitive firm? How can you tell?

b. How much should the firm produce if it wants to maximize profits (or minimize losses)?

c. What price should the firm charge if it wants to maximize profits (or minimize losses)?

d. At the above price and quantity, is the firm making economic profits? How can you tell?

e. Should the firm operate or shut-down in the short-run? How can you tell?

f. What is the firm’s level of profits or losses? Indicate this amount on the graph above.
10. Answer the questions based on the cost and revenue curves below.

a. Is the firm a perfectly competitive firm? How can you tell?

b. How much should the firm produce if it wants to maximize profits (or minimize losses)?

c. What price should the firm charge if it wants to maximize profits (or minimize losses)?

d. At the above price and quantity, is the firm making economic profits? How can you tell?

e. Should the firm operate or shut-down in the short-run? How can you tell?

f. What is the firm’s level of profits or losses? Indicate this amount on the graph above.
Answers to Problems from Old Exams

1. Output per week | Total Costs | Average Costs |
<table>
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<td>Output</td>
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- Assume the firm is a price taker and the market price is $522. How many canoes should this firm produce (assuming it should produce)? 3 canoes (produce where MR = MC) Is the firm covering its variable costs? Yes, P > AVC. Should the firm produce or shut-down in the short-run? Produce
- Assume the firm is a price taker and the market price is $322. How many canoes should this firm produce (assuming it should produce)? 1 canoe (produce where MR = MC) Is the firm covering its variable costs? Yes, P > AVC. Should the firm produce or shut-down in the short-run? Produce

2. A firm in a perfectly competitive industry is selling 1,000 units for $12 (i.e. Price = $12). What is the marginal revenue of the 1,000th unit? MR = $12, Why? For a perfectly competitive firm, MR = P

3. Industry type | # of firms | type of product | control over price |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monopolistic Competition</td>
<td>many</td>
<td>differentiated</td>
<td>price maker</td>
</tr>
<tr>
<td>Perfect Competition</td>
<td>many</td>
<td>identical</td>
<td>price taker</td>
</tr>
<tr>
<td>Monopoly</td>
<td>one</td>
<td>N.A.</td>
<td>very much a price maker</td>
</tr>
<tr>
<td>Oligopoly</td>
<td>few</td>
<td>either identical or differentiated</td>
<td>price maker</td>
</tr>
</tbody>
</table>

4. Fill in the blanks with the correct industry type.
   Easiest to Enter: Perfect Competition or Monopolistic Competition
   2nd Easiest to Enter: Perfect Competition or Monopolistic Competition
   3rd Easiest to Enter: Oligopoly
   Hardest to Enter: Monopoly

5. The key here is that fixed costs have to be paid regardless and should not affect Paul’s decision. All Paul should look at his possible variable costs and benefits, i.e. he should look at what he can change. He has to pay $200 a month for his wrecked car for two years regardless of what he does. These fixed costs should not affect his decision.
   One option is to walk to work and take the lower paying job. This will earn him $1,200 a month. The other option is to pay an added $200, (his variable costs) and earn $1,520. Based on these number, Paul should buy a new car and should take the new job.
Don’t buy a new car
(Variable Benefits) $1,200
- Variable Costs - 0
= Net Gain = $1,200

Buy a new car
(Variable Benefits) $1,520
- Variable Costs - 200
= Net Gain = $1,320

Fixed costs have to be paid in either case and should not affect this decision.
(Learning from his mistakes and not wrecking the new car would also help.)

6 & 7. You are on your own here.

8. Answer the questions based on the cost and revenue curves below.

a. The firm is perfectly competitive firm. We know this because it faces a perfectly elastic, i.e. flat, demand curve. Price is equal to Marginal Revenue, a condition that is only true for perfectly competitive firms (i.e. price takers).

b. Q* $\approx$ 442. This is where MR = MC.

c. P* = $35

d. At Q $\approx$ 442, ATC $\approx$ $38 > P* = $35. The firm is not covering its total costs and is therefore losing money.

e. P* = $35. At Q $\approx$ 440, AVC $\approx$ $22.50. P > AVC. Therefore, the firm is covering its variable costs and should continue to operate during the short-run despite the loses.

f. P* = $35. At Q $\approx$ 442, ATC $\approx$ $38. Therefore, the firm is losing (approximately) $3 per unit x 442 units = $1326. The area is indicated by the shaded box above.

9 & up. You are on your own here.