1. (16 points) a. There are five characteristics that define a market. Please state four of them in terms of what the characteristics are for a perfectly competitive market.

- Many firms
- Homogeneous (similar) product
- Many sellers
- No barriers to entry
- Price takers

b. Please give an example of an actual industry that is perfectly competitive.

Wheat, corn, salmon (many others)

c. Suppose that the market for gizmos is perfectly competitive. The price of gizmos is $4 each. Based on this fact and the information below, fill in all of the columns for Joe's Gizmo Company.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Total Revenue</th>
<th>Marginal Revenue</th>
<th>Fixed Cost</th>
<th>Marginal Cost</th>
<th>Variable Cost</th>
<th>Total Cost</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>---</td>
<td>3</td>
<td>--</td>
<td>0</td>
<td>3</td>
<td>-7</td>
</tr>
<tr>
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<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>-1</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
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<td>3</td>
<td>4</td>
<td>9</td>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>

d. What is the profit-maximizing price for Joe? $4 (can't change higher, won't change lower)

e. What quantity will Joe bring to market?

3 MC = MC @ Q = 3 (2 also accepted as Ti just as high)

f. How much profit will Joe make?

0
2. (20 points) a. There are five characteristics that define a market. Please state four of them in terms of what the characteristics are for a monopolistically competitive market.

- Many sellers
- Many buyers
- Some ability to set price
- Usualy no barriers

b. Please give an example of a firm that would be considered monopolistically competitive. If the name of the firm does not describe what the firm produces, please state that as well.

- Papa John's Pizza
- Diana's Hair Salon
- Hoggys Restaurant

(Many other correct answers)

c. In light of the type of firm you named in part (b), please describe a fixed cost they might have.

- Paying for a bank loan for a new pizza oven
- Rent for the building

(Many other)

d. In light of the type of firm you named in part (b) please describe a variable cost they might have.

- Anything involving labor
- or materials

e. Let us assume that Ralph has a monopolistically competitive firm. His Demand, Marginal Revenue, Marginal Cost, Average Total Cost and Average Variable Cost Curves are given. What quantity would he bring to market?

\[ Q_{	ext{monopolistic}} \]

f. Is he making a profit or a loss?

\[ \text{Profit} = (P - MC)Q \]

g. In the diagram, show his profit or loss by shading the appropriate area.

h. Will Ralph operate in the short run? Explain why.

- Yes, making a \( \pi \). (Also could say \( P > AVC \))

i. Will Ralph operate in the long run? Explain why.

- Yes, making a \( \pi \)
3. (20 points.) Suppose that Acme has a monopoly in their industry.

a. What quantity would they bring to market? (Assume Acme is a profit maximizer.)
   $Q = 520$ where $P = MC$

b. What price would they charge?
   $P = 62$
   *See demand curve*

c. Are they making a profit, a loss or just breaking even?
   $P > ATC$

3. How much of a profit or loss do they make? Please state your answer in dollars below and show your work!
   $520 \times 25 \approx 13000$

d. Suppose we broke up Acme into 200 small firms. If these firms could produce as cheaply as Acme, what quantity would they bring to market?
   Performance $MC = S \approx 975$

e. What would be the perfectly competitive price?
   $P \approx 930$

f. In your own words, what is a deadweight loss?
   *The lost total surplus (consumer + producer) due to a monopoly*

g. Please show the deadweight loss in the diagram.
4. (6 points.) We discussed in class that there are certain barriers to entry. Please cite two and briefly explain them.

- Barriers to Entry - Large firms have lower ATC. Small firms (new entrants) face higher ATC.
- Lack of funds. A good opportunity exists but if you can't get the funds you can't take.
- Lack of resources. Might lack talent of a specific input.
- Legal restrictions such as patents, copyrights, etc.

5. (8 points.) a. What is a cartel?

When a group of firms band together to act like a monopoly.

b. Suppose that tuna fishermen get together and form a tuna cartel. Please use the diagram to the right to show the quantity that the cartel would bring to market.

30

c. What price would they charge?

$5

d. Why do cartels usually not work? (There may be more than one reason, but just give one.)

Greed

Multiple Choice. 3 Points each. Circle the best answer.

6. Accounting profit is equal to
   a. marginal revenue minus marginal cost.
   b. total revenue minus the explicit cost of producing goods and services.
   c. total revenue minus the opportunity cost of producing goods and services.
   d. average revenue minus the average cost of producing the last unit of a good or service.
7. Refer to Figure 1. At levels of output below M the firm experiences
a. economies of scale.
b. diseconomies of scale.
c. economic profit.
d. accounting profit.

8. For a firm in a perfectly competitive market, the price of the good is always
a. equal to marginal revenue.
b. equal to total revenue.
c. greater than average revenue.
d. equal to the firm's efficient scale of output.

9. A profit-maximizing firm in a perfectly competitive market will increase the quantity it produces as long as
a. average revenue is greater than average total cost.
b. average revenue is equal to marginal cost.
c. marginal cost is greater than average total cost.
d. price is above or below marginal cost.

10. When an industry is a natural monopoly,
a. it is characterized by constant returns to scale.
b. it is characterized by diseconomies of scale.
c. a larger number of firms may lead to a lower average cost.
d. a larger number of firms will lead to a higher average cost.
11. The legislation passed by Congress in 1890 to reduce the market power of large and powerful "trusts" is called the
   b. Sherman Act.
   d. 14th Amendment.

12. The commercial jetliner industry, consisting of only the firms of Boeing and Airbus, would best be described as a (an)
   a. perfectly competitive market.
   b. monopolistically competitive market.
   c. oligopoly.
   d. monopoly.

13. The practice of requiring someone to buy two or more items together, rather than separately, is called
   a. resale maintenance.
   b. product fixing.
   c. tying.
   d. free-riding.

14. A profit-maximizing firm in a monopolistically competitive market differs from a firm in a perfectly competitive market because the firm in the monopolistically competitive market
   a. is characterized by market-share maximization.
   b. has no barriers to entry.
   c. faces a downward-sloping demand curve for its product.
   d. faces a horizontal demand curve at the market clearing price.

15. When a profit-maximizing firm in a monopolistically competitive market is producing the long-run equilibrium quantity,
   a. its average revenue will equal its marginal cost.
   b. its marginal revenue will exceed its marginal cost.
   c. it will be earning positive economic profits.
   d. its demand curve will be tangent to its average-total-cost curve, i.e., \( P = ATC \). So no \( \frac{\text{economic (above normal)}}{\text{if}} \)

Bonus Question. Must meet attendance guidelines and answer correctly. Two points.

Suppose we are looking at a monopolistically competitive industry. If the typical firm is earning economic profits and there are no barriers to entry, what will happen to the price of the product in the long run? What will happen to the quantity?

More firms enter \( P \perp Q \uparrow \)