Principles Fall 2013 Midterm 3

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. Trevor’s Tire Company produced and sold 500 tires. The average cost of production per tire was $50. Each tire sold for a price of $65. Trevor’s Tire Company’s total profits are
   a. $7,500.
   b. $25,000.
   c. $32,500.
   d. $67,500.

2. Which of the following is an example of an implicit cost?
   a. salaries paid to owners who work for the firm
   b. interest on money borrowed to finance equipment purchases
   c. cash payments for raw materials
   d. foregone rent on office space owned and used by the firm

3. Refer to Table 13-2. What is the marginal product of the second worker?
   a. 250 units
   b. 200 units
   c. 150 units
   d. 50 units

4. Suppose that a firm has only one variable input, labor, and firm output is zero when labor is zero. When the firm hires 6 workers the firm produces 90 units of output. Fixed costs of production are $6 and the variable cost per unit of labor is $10. The marginal product of the seventh unit of labor is 4. Given this information, what is the average total cost of production when the firm hires 7 workers?
   a. $10.06
   b. $9.64
   c. 81 cents
   d. 70 cents
Table 13-7
The Flying Elvis Copter Rides

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Total Cost</th>
<th>Fixed Cost</th>
<th>Variable Cost</th>
<th>Marginal Cost</th>
<th>Average Fixed Cost</th>
<th>Average Variable Cost</th>
<th>Average Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$50</td>
<td>$50</td>
<td>$0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>$150</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>I</td>
<td>$120</td>
<td>J</td>
<td>K</td>
<td>L</td>
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<tr>
<td>3</td>
<td></td>
<td>M</td>
<td>N</td>
<td>O</td>
<td>P</td>
<td>Q</td>
<td>$120</td>
</tr>
</tbody>
</table>

5. Refer to Table 13-7. What is the value of B?
   a. $25
   b. $50
   c. $100
   d. $200

Table 13-13

<table>
<thead>
<tr>
<th>Output</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$40</td>
</tr>
<tr>
<td>10</td>
<td>$60</td>
</tr>
<tr>
<td>20</td>
<td>$90</td>
</tr>
<tr>
<td>30</td>
<td>$130</td>
</tr>
<tr>
<td>40</td>
<td>$180</td>
</tr>
<tr>
<td>50</td>
<td>$240</td>
</tr>
</tbody>
</table>

6. Refer to Table 13-13. What is average variable cost when output is 50 units?
   a. $3.60
   b. $4.00
   c. $4.40
   d. $4.80

7. When marginal cost is greater than average cost, average cost is
   a. rising.
   b. falling.
   c. constant.
   d. The direction of change in average cost cannot be determined from this information.
8. Refer to Figure 13-10. The firm experiences constant returns to scale if it changes its level of output from
a. $Q_1$ to $Q_2$.
b. $Q_2$ to $Q_4$.
c. $Q_1$ to $Q_3$.
d. $Q_4$ to $Q_5$.

9. In a competitive market, the actions of any single buyer or seller will
a. discourage entry by competitors.
b. influence the profits of other firms in the market.
c. have a negligible impact on the market price.
d. None of the above is correct.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price</th>
</tr>
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<tbody>
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<td>$5</td>
</tr>
<tr>
<td>1</td>
<td>$5</td>
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<tr>
<td>2</td>
<td>$5</td>
</tr>
<tr>
<td>3</td>
<td>$5</td>
</tr>
<tr>
<td>4</td>
<td>$5</td>
</tr>
<tr>
<td>5</td>
<td>$5</td>
</tr>
<tr>
<td>6</td>
<td>$5</td>
</tr>
<tr>
<td>7</td>
<td>$5</td>
</tr>
<tr>
<td>8</td>
<td>$5</td>
</tr>
<tr>
<td>9</td>
<td>$5</td>
</tr>
</tbody>
</table>

10. Refer to Table 14-1. If the firm doubles its output from 3 to 6 units, total revenue will
a. increase by less than $15.
b. increase by exactly $15.
c. increase by more than $15.
d. Total revenue cannot be determined from the information provided.
11. A competitive firm has been selling its output for $20 per unit and has been maximizing its profit, which is positive. Then, the price rises to $25, and the firm makes whatever adjustments are necessary to maximize its profit at the now-higher price. Once the firm has adjusted, its
a. quantity of output is higher than it was previously.
b. average total cost is higher than it was previously.
c. marginal revenue is higher than it was previously.
d. All of the above are correct.

12. The accountants hired by the Brookside Racquet Club have determined total fixed cost to be $75,000, total variable cost to be $130,000, and total revenue to be $145,000. Because of this information, in the short run, the Brookside Racquet Club should
a. shut down.
b. exit the industry.
c. stay open because shutting down would be more expensive.
d. stay open because the firm is making an economic profit.

13. Consider a firm operating in a competitive market. The firm is producing 40 units of output, has an average total cost of production equal to $6, and is earning $240 economic profit in the short run. What is the current market price?
a. $0
b. $6
c. $10
d. $12

14. When a profit-maximizing competitive firm finds itself minimizing losses because it is unable to earn a positive profit, this task is accomplished by producing the quantity at which price is equal to
a. sunk cost.
b. average fixed cost.
c. average variable cost.
d. marginal cost.

15. In order to sell more of its product, a monopolist must
a. lobby the government for a subsidy.
b. lower its price.
c. advertise.
d. enact barriers to entry in related markets.

16. What is the shape of the monopolist’s marginal revenue curve?
a. a downward-sloping line that is identical to the demand curve
b. a downward-sloping line that lies below the demand curve
c. a horizontal line that is identical to the demand curve
d. a horizontal line that lies below the demand curve

17. For a monopolist, when the output effect is greater than the price effect, marginal revenue is
a. positive.
b. negative.
c. zero.
d. maximized.
18. For a monopolist,
   a. average revenue is always greater than the price of the good.
   b. marginal revenue is always less than the price of the good.
   c. marginal cost is always greater than average total cost.
   d. marginal revenue equals marginal cost at the point where total revenue is maximized.

Table 15-8
The following table provides information on the price, quantity, and average total cost for a monopoly.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
<th>Average Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td>$18</td>
<td>5</td>
<td>$14.00</td>
</tr>
<tr>
<td>$12</td>
<td>10</td>
<td>$11.00</td>
</tr>
<tr>
<td>$6</td>
<td>15</td>
<td>$10.67</td>
</tr>
<tr>
<td>$0</td>
<td>20</td>
<td>$11.00</td>
</tr>
</tbody>
</table>

19. Refer to Table 15-8. At what price will the monopolist maximize his profit?
   a. $6
   b. $12
   c. $18
   d. $24

20. Price discrimination requires the firm to
   a. separate customers according to their willingnesses to pay.
   b. differentiate between different units of its product.
   c. engage in arbitrage.
   d. use coupons.

21. Which of the following statements comparing monopoly with competition is correct?
   a. A monopolist produces a higher level of output and charges a lower price than a competitive firm would.
   b. With perfect price discrimination, the total surplus under monopoly can be the same as under competition.
   c. With or without price discrimination, the consumer surplus under monopoly is at least as large as it would be under competition.
   d. The deadweight loss associated with monopoly is caused by the positive economic profits of the monopolist; competitive firms do not earn a positive economic profit so there is no deadweight loss under competition.
22. Refer to Figure 15-17. The consumer surplus at the monopolist’s profit-maximizing price is
   a. $450.
   b. $900.
   c. $1,350.
   d. $2,025.

23. Which of the following market structures is considered a differentiated products market?
   a. Perfect competition
   b. Monopolistic competition
   c. Monopoly
   d. Both a and b are differentiated products markets.

24. A monopolistically competitive firm faces the following demand curve for its product:

<table>
<thead>
<tr>
<th>Price ($)</th>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

The firm has total fixed costs of $20 and a constant marginal cost of $5 per unit. The firm will maximize profit with the production of
   a. 6 units of output.
   b. 8 units of output.
   c. 10 units of output.
   d. 12 units of output.

25. Which of the following is not a key feature of monopolistic competition?
   a. Excess capacity
   b. A markup of price over marginal cost
   c. Positive economic profits for firms in the long run
   d. Differentiated products among firms in the market
26. The free entry and exit of firms in a monopolistically competitive market guarantees that
   a. both economic profits and economic losses can persist in the long run.
   b. both economic profits and economic losses disappear in the long run.
   c. economic profits, but not economic losses, can persist in the long run.
   d. economic losses, but not economic profits, can persist in the long run.

27. Because a monopolistically competitive firm has some market power, in the long-run the price of its product exceeds its
   a. average revenue.
   b. average total cost.
   c. marginal cost.
   d. None of the above is correct.

*Figure 16-8*

The figure is drawn for a monopolistically-competitive firm.

28. Refer to Figure 16-8. In response to the situation represented by the figure, we would expect
   a. new firms to enter the market.
   b. some of the firms that are currently in the market to exit.
   c. this firm’s profit to move from its current value toward a positive value.
   d. None of the above are correct.

29. Firms that spend the greatest percentage of their revenue on advertising tend to be firms that sell
   a. industrial products.
   b. homogeneous products.
   c. consumer goods for which there are no close substitutes.
   d. highly-differentiated consumer goods.
30. Because each oligopolist cares about its own profit rather than the collective profit of all the oligopolists together,
a. they are unable to maintain the same degree of monopoly power enjoyed by a monopolist.
b. each firm's profit always ends up being zero.
c. society is worse off as a result.
d. Both a and c are correct.

Table 17-3. The information in the table below shows the total demand for premium-channel digital cable TV subscriptions in a small urban market. Assume that each digital cable TV operator pays a fixed cost of $200,000 (per year) to provide premium digital channels in the market area and that the marginal cost of providing the premium channel service to a household is zero.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$180</td>
</tr>
<tr>
<td>3,000</td>
<td>$150</td>
</tr>
<tr>
<td>6,000</td>
<td>$120</td>
</tr>
<tr>
<td>9,000</td>
<td>$ 90</td>
</tr>
<tr>
<td>12,000</td>
<td>$ 60</td>
</tr>
<tr>
<td>15,000</td>
<td>$ 30</td>
</tr>
<tr>
<td>18,000</td>
<td>$ 0</td>
</tr>
</tbody>
</table>

31. Refer to Table 17-3. Assume there are two digital cable TV companies operating in this market. If they are able to collude on the quantity of subscriptions that will be sold and on the price that will be charged for subscriptions, then their agreement will stipulate that
a. each firm will charge a price of $90 and each firm will sell 4,500 subscriptions.
b. each firm will charge a price of $90 and each firm will sell 9,000 subscriptions.
c. each firm will charge a price of $120 and each firm will sell 3,000 subscriptions.
d. each firm will charge a price of $150 and each firm will sell 1,500 subscriptions.

32. When price is above marginal cost, selling one more unit at the current price will increase profit. This concept is known as the
a. income effect.
b. price effect.
c. output effect.
d. cartel effect.
Table 17-9
Only two firms, Acme and Pinnacle, sell a particular product. The table below shows the demand curve for their product. Each firm has the same constant marginal cost of $10 and zero fixed cost.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
<th>Total Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65</td>
<td>100</td>
<td>6500</td>
</tr>
<tr>
<td>60</td>
<td>200</td>
<td>12000</td>
</tr>
<tr>
<td>55</td>
<td>300</td>
<td>16500</td>
</tr>
<tr>
<td>50</td>
<td>400</td>
<td>20000</td>
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<tr>
<td>45</td>
<td>500</td>
<td>22500</td>
</tr>
<tr>
<td>40</td>
<td>600</td>
<td>24000</td>
</tr>
<tr>
<td>35</td>
<td>700</td>
<td>24500</td>
</tr>
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<td>30</td>
<td>800</td>
<td>24000</td>
</tr>
<tr>
<td>25</td>
<td>900</td>
<td>22500</td>
</tr>
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<td>20</td>
<td>1000</td>
<td>20000</td>
</tr>
<tr>
<td>15</td>
<td>1100</td>
<td>16500</td>
</tr>
<tr>
<td>10</td>
<td>1200</td>
<td>12000</td>
</tr>
<tr>
<td>5</td>
<td>1300</td>
<td>6500</td>
</tr>
<tr>
<td>0</td>
<td>1400</td>
<td>0</td>
</tr>
</tbody>
</table>

33. Refer to Table 17-9. Acme and Pinnacle agree to maximize joint profits. However, while Acme produces the agreed upon amount, Pinnacle breaks the agreement and produces 100 more than agreed, how much profit does Pinnacle make?
   a. $10,000
   b. $9,000
   c. $8,750
   d. $7500

34. If one firm left a duopoly market where the firms did not cooperate then
   a. price and quantity would rise
   b. price would rise and quantity would fall.
   c. quantity would rise and price would fall.
   d. quantity and price would fall.

35. In which case do firms have some control over their price?
   a. oligopoly and perfect competition
   b. oligopoly but not perfect competition
   c. perfect competition but not oligopoly
   d. neither perfect competition nor oligopoly
36. The likely outcome of the standard prisoners’ dilemma game is that
   a. neither prisoner confesses.
   b. exactly one prisoner confesses.
   c. both prisoners confess.
   d. Not enough information is given to answer this question.

**Scenario 17-3.** Consider two countries, Muria and Zenya, that are engaged in an arms race. Each country must decide whether to build new weapons or to disarm existing weapons. Each country prefers to have more arms than the other because a large arsenal gives it more influence in world affairs. But each country also prefers to live in a world safe from the other country’s weapons. The following table shows the possible outcomes for each decision combination. The numbers in each cell represent the country’s ranking of the outcome (4 = best outcome, 1 = worst outcome).

<table>
<thead>
<tr>
<th></th>
<th>Build new weapons</th>
<th>Disarm existing weapons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Muria</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build new</td>
<td>Muria: 2</td>
<td>Muria: 4</td>
</tr>
<tr>
<td>weapons</td>
<td>Zenya: 2</td>
<td>Zenya: 1</td>
</tr>
<tr>
<td>Disarm existing</td>
<td>Muria: 1</td>
<td>Muria: 3</td>
</tr>
<tr>
<td>weapons</td>
<td>Zenya: 4</td>
<td>Zenya: 3</td>
</tr>
</tbody>
</table>

37. Refer to Scenario 17-3. Building new weapons is a dominant strategy for
   a. Muria, but not for Zenya.
   b. Zenya, but not for Muria.
   c. both Muria and Zenya.
   d. neither Muria nor Zenya.
Principles Fall 2013 Midterm 3
Answer Section

MULTIPLE CHOICE

1. ANS: A
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 2
   REF: 13-1
   TOP: Total revenue
   MSC: Applicative

2. ANS: D
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 1
   REF: 13-1
   TOP: Implicit costs
   MSC: Interpretive

3. ANS: A
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 2
   REF: 13-2
   TOP: Marginal product
   MSC: Analytical

4. ANS: C
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 3
   REF: 13-3
   TOP: Average total cost
   MSC: Applicative

5. ANS: C
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 1
   REF: 13-3
   TOP: Variable costs
   MSC: Analytical

6. ANS: B
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 3
   REF: 13-3
   TOP: Average variable cost
   MSC: Analytical

7. ANS: A
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 2
   REF: 13-3
   TOP: Cost curves
   MSC: Analytical

8. ANS: B
   NAT: Analytic
   LOC: Costs of production
   PTS: 1 DIF: 2
   REF: 13-4
   TOP: Constant returns to scale
   MSC: Analytical

9. ANS: C
   NAT: Analytic
   LOC: Perfect competition
   PTS: 1 DIF: 2
   REF: 14-1
   TOP: Competitive markets
   MSC: Interpretive

10. ANS: B
    NAT: Analytic
    LOC: Perfect competition
    PTS: 1 DIF: 2
    REF: 14-1
    TOP: Total revenue
    MSC: Applicative

11. ANS: D
    NAT: Analytic
    LOC: Perfect competition
    PTS: 1 DIF: 3
    REF: 14-2
    TOP: Competitive firms
    MSC: Interpretive

12. ANS: C
    NAT: Analytic
    LOC: Perfect competition
    PTS: 1 DIF: 2
    REF: 14-2
    TOP: Profit maximization
    MSC: Analytical

13. ANS: D
    NAT: Analytic
    LOC: Perfect competition
    PTS: 1 DIF: 3
    REF: 14-2
    TOP: Profit
    MSC: Analytical
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>14. ANS: D</td>
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</tr>
<tr>
<td>MSC: Interpretive</td>
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<tr>
<td>MSC: Interpretive</td>
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<tr>
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<tr>
<td>17. ANS: A</td>
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<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td>18. ANS: B</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td>19. ANS: C</td>
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<td>NAT: Analytic</td>
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<td>MSC: Analytical</td>
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<td>23. ANS: B</td>
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<td>MSC: Interpretive</td>
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<td>24. ANS: A</td>
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<td>NAT: Analytic</td>
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<td>MSC: Applicative</td>
</tr>
<tr>
<td>25. ANS: C</td>
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<td>NAT: Analytic</td>
</tr>
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<td>MSC: Interpretive</td>
</tr>
<tr>
<td>26. ANS: B</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td>27. ANS: C</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td>28. ANS: D</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td>29. ANS: D</td>
</tr>
<tr>
<td>NAT: Analytic</td>
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<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td>ID: A</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td><strong>30.</strong> ANS: A</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td><strong>31.</strong> ANS: A</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td><strong>32.</strong> ANS: C</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Applicative</td>
</tr>
<tr>
<td><strong>33.</strong> ANS: A</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td><strong>34.</strong> ANS: B</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td><strong>35.</strong> ANS: B</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td><strong>36.</strong> ANS: C</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Interpretive</td>
</tr>
<tr>
<td><strong>37.</strong> ANS: C</td>
</tr>
<tr>
<td>NAT: Analytic</td>
</tr>
<tr>
<td>MSC: Applicative</td>
</tr>
</tbody>
</table>
Principles Fall 2013 Midterm 3

Multiple Choice
*Identify the choice that best completes the statement or answers the question.*

1. What is the shape of the monopolist’s marginal revenue curve?
   a. a horizontal line that is identical to the demand curve
   b. a downward-sloping line that is identical to the demand curve
   c. a horizontal line that lies below the demand curve
   d. a downward-sloping line that lies below the demand curve

2. When a profit-maximizing competitive firm finds itself minimizing losses because it is unable to earn a positive profit, this task is accomplished by producing the quantity at which price is equal to
   a. marginal cost.
   b. average variable cost.
   c. sunk cost.
   d. average fixed cost.

3. In order to sell more of its product, a monopolist must
   a. enact barriers to entry in related markets.
   b. lobby the government for a subsidy.
   c. lower its price.
   d. advertise.

4. For a monopolist,
   a. average revenue is always greater than the price of the good.
   b. marginal revenue equals marginal cost at the point where total revenue is maximized.
   c. marginal revenue is always less than the price of the good.
   d. marginal cost is always greater than average total cost.
5. Refer to Figure 13-10. The firm experiences constant returns to scale if it changes its level of output from
   a. $Q_1$ to $Q_5$.
   b. $Q_1$ to $Q_2$.
   c. $Q_1$ to $Q_3$.
   d. $Q_2$ to $Q_4$.

6. Which of the following is an example of an implicit cost?
   a. cash payments for raw materials
   b. salaries paid to owners who work for the firm
   c. foregone rent on office space owned and used by the firm
   d. interest on money borrowed to finance equipment purchases

7. A competitive firm has been selling its output for $20 per unit and has been maximizing its profit, which is positive. Then, the price rises to $25, and the firm makes whatever adjustments are necessary to maximize its profit at the now-higher price. Once the firm has adjusted, its
   a. marginal revenue is higher than it was previously.
   b. quantity of output is higher than it was previously.
   c. average total cost is higher than it was previously.
   d. All of the above are correct.

8. Trevor’s Tire Company produced and sold 500 tires. The average cost of production per tire was $50. Each tire sold for a price of $65. Trevor’s Tire Company’s total profits are
   a. $7,500.
   b. $32,500.
   c. $25,000.
   d. $67,500.
Table 14-1

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$5</td>
</tr>
<tr>
<td>1</td>
<td>$5</td>
</tr>
<tr>
<td>2</td>
<td>$5</td>
</tr>
<tr>
<td>3</td>
<td>$5</td>
</tr>
<tr>
<td>4</td>
<td>$5</td>
</tr>
<tr>
<td>5</td>
<td>$5</td>
</tr>
<tr>
<td>6</td>
<td>$5</td>
</tr>
<tr>
<td>7</td>
<td>$5</td>
</tr>
<tr>
<td>8</td>
<td>$5</td>
</tr>
<tr>
<td>9</td>
<td>$5</td>
</tr>
</tbody>
</table>

Refer to Table 14-1. If the firm doubles its output from 3 to 6 units, total revenue will
a. increase by less than $15.
b. increase by exactly $15.
c. increase by more than $15.
d. Total revenue cannot be determined from the information provided.

When marginal cost is greater than average cost, average cost is
a. constant.
b. rising.
c. falling.
d. The direction of change in average cost cannot be determined from this information.

Table 17-3. The information in the table below shows the total demand for premium-channel digital cable TV subscriptions in a small urban market. Assume that each digital cable TV operator pays a fixed cost of $200,000 (per year) to provide premium digital channels in the market area and that the marginal cost of providing the premium channel service to a household is zero.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$180</td>
</tr>
<tr>
<td>3,000</td>
<td>$150</td>
</tr>
<tr>
<td>6,000</td>
<td>$120</td>
</tr>
<tr>
<td>9,000</td>
<td>$ 90</td>
</tr>
<tr>
<td>12,000</td>
<td>$ 60</td>
</tr>
<tr>
<td>15,000</td>
<td>$ 30</td>
</tr>
<tr>
<td>18,000</td>
<td>$ 0</td>
</tr>
</tbody>
</table>

Refer to Table 17-3. Assume there are two digital cable TV companies operating in this market. If they are able to collude on the quantity of subscriptions that will be sold and on the price that will be charged for subscriptions, then their agreement will stipulate that
a. each firm will charge a price of $90 and each firm will sell 4,500 subscriptions.
b. each firm will charge a price of $90 and each firm will sell 9,000 subscriptions.
c. each firm will charge a price of $150 and each firm will sell 1,500 subscriptions.
d. each firm will charge a price of $120 and each firm will sell 3,000 subscriptions.
12. In which case do firms have some control over their price?
   a. neither perfect competition nor oligopoly
   b. oligopoly and perfect competition
   c. oligopoly but not perfect competition
   d. perfect competition but not oligopoly

13. Which of the following market structures is considered a differentiated products market?
   a. Perfect competition
   b. Monopolistic competition
   c. Monopoly
   d. Both a and b are differentiated products markets.

14. Because each oligopolist cares about its own profit rather than the collective profit of all the oligopolists together,
   a. they are unable to maintain the same degree of monopoly power enjoyed by a monopolist.
   b. each firm's profit always ends up being zero.
   c. society is worse off as a result.
   d. Both a and c are correct.

15. In a competitive market, the actions of any single buyer or seller will
   a. influence the profits of other firms in the market.
   b. discourage entry by competitors.
   c. have a negligible impact on the market price.
   d. None of the above is correct.

Scenario 17-3. Consider two countries, Muria and Zenya, that are engaged in an arms race. Each country must decide whether to build new weapons or to disarm existing weapons. Each country prefers to have more arms than the other because a large arsenal gives it more influence in world affairs. But each country also prefers to live in a world safe from the other country's weapons. The following table shows the possible outcomes for each decision combination. The numbers in each cell represent the country’s ranking of the outcome (4 = best outcome, 1 = worst outcome).

<table>
<thead>
<tr>
<th></th>
<th>Build new weapons</th>
<th>Disarm existing weapons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Muria</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build new</td>
<td>Muria: 2</td>
<td>Muria: 4</td>
</tr>
<tr>
<td>weapons</td>
<td>Zenya: 2</td>
<td>Zenya: 1</td>
</tr>
<tr>
<td>Disarm</td>
<td>Muria: 1</td>
<td>Muria: 3</td>
</tr>
<tr>
<td>existing</td>
<td>Zenya: 4</td>
<td>Zenya: 3</td>
</tr>
<tr>
<td>weapons</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. **Refer to Scenario 17-3.** Building new weapons is a dominant strategy for
   a. both Muria and Zenya.
   b. Muria, but not for Zenya.
   c. Zenya, but not for Muria.
   d. neither Muria nor Zenya.
17. A monopolistically competitive firm faces the following demand curve for its product:

<table>
<thead>
<tr>
<th>Price ($)</th>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

The firm has total fixed costs of $20 and a constant marginal cost of $5 per unit. The firm will maximize profit with the production of
a. 12 units of output.
b. 6 units of output.
c. 10 units of output.
d. 8 units of output.

18. For a monopolist, when the output effect is greater than the price effect, marginal revenue is
a. zero.
b. maximized.
c. negative.
d. positive.

19. The likely outcome of the standard prisoners’ dilemma game is that
a. exactly one prisoner confesses.
b. both prisoners confess.
c. neither prisoner confesses.
d. Not enough information is given to answer this question.

Table 15-8
The following table provides information on the price, quantity, and average total cost for a monopoly.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
<th>Average Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td>$18</td>
<td>5</td>
<td>$14.00</td>
</tr>
<tr>
<td>$12</td>
<td>10</td>
<td>$11.00</td>
</tr>
<tr>
<td>$6</td>
<td>15</td>
<td>$10.67</td>
</tr>
<tr>
<td>$0</td>
<td>20</td>
<td>$11.00</td>
</tr>
</tbody>
</table>

20. Refer to Table 15-8. At what price will the monopolist maximize his profit?
   a. $6
   b. $24
   c. $12
   d. $18

21. When price is above marginal cost, selling one more unit at the current price will increase profit. This concept is known as the
   a. price effect.
   b. output effect.
   c. cartel effect.
   d. income effect.
Table 17-9
Only two firms, Acme and Pinnacle, sell a particular product. The table below shows the demand curve for their product. Each firm has the same constant marginal cost of $10 and zero fixed cost.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
<th>Total Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65</td>
<td>100</td>
<td>6500</td>
</tr>
<tr>
<td>60</td>
<td>200</td>
<td>12000</td>
</tr>
<tr>
<td>55</td>
<td>300</td>
<td>16500</td>
</tr>
<tr>
<td>50</td>
<td>400</td>
<td>20000</td>
</tr>
<tr>
<td>45</td>
<td>500</td>
<td>22500</td>
</tr>
<tr>
<td>40</td>
<td>600</td>
<td>24000</td>
</tr>
<tr>
<td>35</td>
<td>700</td>
<td>24500</td>
</tr>
<tr>
<td>30</td>
<td>800</td>
<td>24000</td>
</tr>
<tr>
<td>25</td>
<td>900</td>
<td>22500</td>
</tr>
<tr>
<td>20</td>
<td>1000</td>
<td>20000</td>
</tr>
<tr>
<td>15</td>
<td>1100</td>
<td>16500</td>
</tr>
<tr>
<td>10</td>
<td>1200</td>
<td>12000</td>
</tr>
<tr>
<td>5</td>
<td>1300</td>
<td>6500</td>
</tr>
<tr>
<td>0</td>
<td>1400</td>
<td>0</td>
</tr>
</tbody>
</table>

22. Refer to Table 17-9. Acme and Pinnacle agree to maximize joint profits. However, while Acme produces the agreed upon amount, Pinnacle breaks the agreement and produces 100 more than agreed, how much profit does Pinnacle make?
   a. $8,750
   b. $9,000
   c. $7500
   d. $10,000

23. Which of the following statements comparing monopoly with competition is correct?
   a. With or without price discrimination, the consumer surplus under monopoly is at least as large as it would be under competition.
   b. The deadweight loss associated with monopoly is caused by the positive economic profits of the monopolist; competitive firms do not earn a positive economic profit so there is no deadweight loss under competition.
   c. With perfect price discrimination, the total surplus under monopoly can be the same as under competition.
   d. A monopolist produces a higher level of output and charges a lower price than a competitive firm would.
24. Suppose that a firm has only one variable input, labor, and firm output is zero when labor is zero. When the firm hires 6 workers the firm produces 90 units of output. Fixed costs of production are $6 and the variable cost per unit of labor is $10. The marginal product of the seventh unit of labor is 4. Given this information, what is the average total cost of production when the firm hires 7 workers?
   a. $10.06
   b. $9.64
   c. 81 cents
   d. 70 cents

25. Refer to Figure 15-17. The consumer surplus at the monopolist’s profit-maximizing price is
   a. $1,350.
   b. $900.
   c. $450.
   d. $2,025.

26. Firms that spend the greatest percentage of their revenue on advertising tend to be firms that sell
   a. consumer goods for which there are no close substitutes.
   b. industrial products.
   c. homogeneous products.
   d. highly-differentiated consumer goods.

27. Which of the following is not a key feature of monopolistic competition?
   a. A markup of price over marginal cost
   b. Excess capacity
   c. Differentiated products among firms in the market
   d. Positive economic profits for firms in the long run
28. The free entry and exit of firms in a monopolistically competitive market guarantees that
   a. both economic profits and economic losses disappear in the long run.
   b. economic losses, but not economic profits, can persist in the long run.
   c. economic profits, but not economic losses, can persist in the long run.
   d. both economic profits and economic losses can persist in the long run.

Table 13-7
The Flying Elvis Copter Rides

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Total Cost</th>
<th>Fixed Cost</th>
<th>Variable Cost</th>
<th>Marginal Cost</th>
<th>Average Fixed Cost</th>
<th>Average Variable Cost</th>
<th>Average Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$50</td>
<td>$50</td>
<td>$0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>$150</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>2</td>
<td>G</td>
<td>H</td>
<td>I</td>
<td>$120</td>
<td>J</td>
<td>K</td>
<td>L</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>N</td>
<td>O</td>
<td>P</td>
<td>Q</td>
<td>$120</td>
<td>R</td>
</tr>
</tbody>
</table>

29. Refer to Table 13-7. What is the value of B?
   a. $25
   b. $200
   c. $100
   d. $50
Figure 16-8
The figure is drawn for a monopolistically-competitive firm.

30. Refer to Figure 16-8. In response to the situation represented by the figure, we would expect
   a. some of the firms that are currently in the market to exit.
   b. new firms to enter the market.
   c. this firm’s profit to move from its current value toward a positive value.
   d. None of the above are correct.

31. Because a monopolistically competitive firm has some market power, in the long-run the price of its product
   exceeds its
   a. marginal cost.
   b. average total cost.
   c. average revenue.
   d. None of the above is correct.

32. Consider a firm operating in a competitive market. The firm is producing 40 units of output, has an average
    total cost of production equal to $6, and is earning $240 economic profit in the short run. What is the current
    market price?
    a. $12
    b. $0
    c. $6
    d. $10
Table 13-2

<table>
<thead>
<tr>
<th>Number of Workers</th>
<th>Total Output</th>
<th>Marginal Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>650</td>
<td></td>
</tr>
</tbody>
</table>

33. Refer to Table 13-2. What is the marginal product of the second worker?
   a. 200 units  
   b. 50 units  
   c. 250 units  
   d. 150 units

34. Price discrimination requires the firm to
   a. engage in arbitrage.  
   b. differentiate between different units of its product.  
   c. separate customers according to their willingnesses to pay.  
   d. use coupons.

35. If one firm left a duopoly market where the firms did not cooperate then
   a. quantity and price would fall.  
   b. price and quantity would rise  
   c. quantity would rise and price would fall.  
   d. price would rise and quantity would fall.

Table 13-13

<table>
<thead>
<tr>
<th>Output</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$40</td>
</tr>
<tr>
<td>10</td>
<td>$60</td>
</tr>
<tr>
<td>20</td>
<td>$90</td>
</tr>
<tr>
<td>30</td>
<td>$130</td>
</tr>
<tr>
<td>40</td>
<td>$180</td>
</tr>
<tr>
<td>50</td>
<td>$240</td>
</tr>
</tbody>
</table>

36. Refer to Table 13-13. What is average variable cost when output is 50 units?
   a. $4.80  
   b. $4.40  
   c. $4.00  
   d. $3.60
37. The accountants hired by the Brookside Racquet Club have determined total fixed cost to be $75,000, total variable cost to be $130,000, and total revenue to be $145,000. Because of this information, in the short run, the Brookside Racquet Club should
   a. stay open because the firm is making an economic profit.
   b. exit the industry.
   c. shut down.
   d. stay open because shutting down would be more expensive.
MULTIPLE CHOICE

1. ANS: D  
   PTS: 1  
   DIF: 2  
   REF: 15-2  
   NAT: Analytic  
   LOC: Monopoly  
   TOP: Marginal revenue  
   MSC: Interpretive

2. ANS: A  
   PTS: 1  
   DIF: 2  
   REF: 14-2  
   NAT: Analytic  
   LOC: Perfect competition  
   TOP: Losses  
   MSC: Interpretive

3. ANS: C  
   PTS: 1  
   DIF: 2  
   REF: 15-2  
   NAT: Analytic  
   LOC: Monopoly  
   TOP: Monopoly  
   MSC: Interpretive

4. ANS: C  
   PTS: 1  
   DIF: 2  
   REF: 15-2  
   NAT: Analytic  
   LOC: Monopoly  
   TOP: Marginal revenue  
   MSC: Interpretive

5. ANS: D  
   PTS: 1  
   DIF: 2  
   REF: 13-4  
   NAT: Analytic  
   LOC: Costs of production  
   TOP: Constant returns to scale  
   MSC: Analytical

6. ANS: C  
   PTS: 1  
   DIF: 1  
   REF: 13-1  
   NAT: Analytic  
   LOC: Costs of production  
   TOP: Implicit costs  
   MSC: Interpretive

7. ANS: D  
   PTS: 1  
   DIF: 3  
   REF: 14-2  
   NAT: Analytic  
   LOC: Perfect competition  
   TOP: Competitive firms  
   MSC: Interpretive

8. ANS: A  
   PTS: 1  
   DIF: 2  
   REF: 13-1  
   NAT: Analytic  
   LOC: Costs of production  
   TOP: Total revenue  
   MSC: Applicative

9. ANS: B  
   PTS: 1  
   DIF: 2  
   REF: 14-1  
   NAT: Analytic  
   LOC: Perfect competition  
   TOP: Total revenue  
   MSC: Applicative

10. ANS: B  
   PTS: 1  
   DIF: 2  
   REF: 13-3  
   NAT: Analytic  
   LOC: Costs of production  
   TOP: Cost curves  
   MSC: Applicative

11. ANS: A  
   PTS: 1  
   DIF: 2  
   REF: 17-1  
   NAT: Analytic  
   LOC: Oligopoly  
   TOP: Duopoly | Collusion  
   MSC: Applicative

12. ANS: C  
   PTS: 1  
   DIF: 1  
   REF: 17-1  
   NAT: Analytic  
   LOC: Oligopoly  
   TOP: Market structure comparison  
   MSC: Interpretive

13. ANS: B  
   PTS: 1  
   DIF: 2  
   REF: 16-1  
   NAT: Analytic  
   LOC: Monopolistic competition  
   TOP: Imperfect competition  
   MSC: Interpretive

14. ANS: A  
   PTS: 1  
   DIF: 2  
   REF: 17-1  
   NAT: Analytic  
   LOC: Oligopoly  
   TOP: Cartels  
   MSC: Interpretive
15. ANS: C  
PTS: 1  
DIF: 2  
REF: 14-1  
NAT: Analytic  
LOC: Perfect competition  
TOP: Competitive markets

16. ANS: A  
PTS: 1  
DIF: 2  
REF: 17-2  
NAT: Analytic  
LOC: Oligopoly  
TOP: Dominant strategy

17. ANS: B  
PTS: 1  
DIF: 3  
REF: 16-2  
NAT: Analytic  
LOC: Monopolistic competition  
TOP: Profit maximization

18. ANS: D  
PTS: 1  
DIF: 3  
REF: 15-2  
NAT: Analytic  
LOC: Monopoly  
TOP: Marginal revenue

19. ANS: B  
PTS: 1  
DIF: 1  
REF: 17-2  
NAT: Analytic  
LOC: Oligopoly  
TOP: Prisoners' dilemma

20. ANS: D  
PTS: 1  
DIF: 3  
REF: 15-2  
NAT: Analytic  
LOC: Monopoly  
TOP: Profit maximization

21. ANS: B  
PTS: 1  
DIF: 2  
REF: 17-1  
NAT: Analytic  
LOC: Oligopoly  
TOP: Profit maximization

22. ANS: D  
PTS: 1  
DIF: 3  
REF: 17-1  
NAT: Analytic  
LOC: Oligopoly  
TOP: Oligopoly  
MSC: Analytical

23. ANS: C  
PTS: 1  
DIF: 1  
REF: 15-4  
NAT: Analytic  
LOC: Monopoly  
TOP: Price discrimination

24. ANS: C  
PTS: 1  
DIF: 3  
REF: 13-3  
NAT: Analytic  
LOC: Costs of production  
TOP: Average total cost

25. ANS: C  
PTS: 1  
DIF: 2  
REF: 15-4  
NAT: Analytic  
LOC: Monopoly  
TOP: Consumer surplus

26. ANS: D  
PTS: 1  
DIF: 1  
REF: 16-3  
NAT: Analytic  
LOC: Monopolistic competition  
TOP: Advertising

27. ANS: D  
PTS: 1  
DIF: 2  
REF: 16-2  
NAT: Analytic  
LOC: Monopolistic competition  
TOP: Monopolistic competition

28. ANS: A  
PTS: 1  
DIF: 2  
REF: 16-2  
NAT: Analytic  
LOC: Monopolistic competition  
TOP: Long-run equilibrium

29. ANS: C  
PTS: 1  
DIF: 1  
REF: 13-3  
NAT: Analytic  
LOC: Costs of production  
TOP: Variable costs

30. ANS: D  
PTS: 1  
DIF: 1  
REF: 16-2  
NAT: Analytic  
LOC: Monopolistic competition  
TOP: Monopolistic competition  
MSC: Interpretive
<p>| | | | | |</p>
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<td>LOC: Costs of production</td>
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