Economics 160
Quiz 1
Gallet
Fall 2019

FORM A

Use the following to answer questions (1) through (4):

ABC painting service uses painting equipment (denoted K) and labor (denoted L) to paint houses. Interested in weekly production (i.e., the number of houses painted per week, denoted Q), with K fixed at 3 in any given week, ABC faces the following production table:

<table>
<thead>
<tr>
<th>Q</th>
<th>L</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
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<tr>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: The price of capital (denoted P_k) is 500
The price of labor (denoted P_L) is 600

[1] In any given week, ABC is operating in the short-run.
A. True
B. False

[2] The total cost of painting 3 houses per week equals:
\[ TC = P_K \cdot K + P_L \cdot L \]
\[ TC = 500 \cdot 3 + 600 \cdot L \]
A. 3300
B. 2800
C. 2700
D. 2400

[3] The average fixed cost of painting 3 houses per week equals:
\[ AFC = \frac{TFC}{Q} = \frac{1500}{3} = 500 \]
A. 367
B. 400
C. 500
D. 600

[4] The marginal cost associated with the 1st house painted is less than 500.
A. True
B. False

[5] If marginal cost is _____, then average total cost must be falling.
A. below average total cost
B. equal to average variable cost
C. below average variable cost
D. All of the above

See P.5 of notes
[6] Profits are considered an element of:
A. market structure
B. firm conduct
C. market performance

[7] Imagine a firm currently faces the following conditions: total revenue = $1 million, total economic cost = $800,000, and opportunity cost = $300,000. Accordingly, this firm’s accounting profit currently equals:

\[ \text{Accounting Profit} = \text{Total Revenue} - \text{Total Economic Cost} \]

A. $200,000
B. $300,000
C. $500,000
D. None of the above

[8] Suppose a 10% increase in price leads to a 20% decline in quantity demanded. Accordingly, the price elasticity of demand falls in the ___ range.

A. elastic
B. inelastic
C. unit elastic
D. none of the above

[9] Operating in the short-run, a firm is currently producing 100 units of output, with its average total cost equal to $10 and its average variable cost equal to $8. At 101 units of output, the firm’s average fixed cost will:

\[ \text{AFC} = \frac{\text{TFC}}{Q} \]

A. be greater than $2
B. equal $2
C. be less than $2
D. all of the above are possible.

[10] Specialization of inputs is one reason why a firm might encounter economies of scale.

A. True
B. False
FORM B

[1] Profits are considered an element of:
A. market structure
B. firm conduct
C. market performance

[2] Imagine a firm currently faces the following conditions: total revenue = $1 million, total economic cost = $900,000, and opportunity cost = $200,000. Accordingly, this firm’s accounting profit currently equals:

\[ \text{See P. 3 of Notes} \]

A. $200,000
B. $300,000
C. $500,000
D. None of the above

[3] Suppose a 10% increase in price leads to a 5% decline in quantity demanded. Accordingly, the price elasticity of demand falls in the___ range.

A. elastic
B. inelastic
C. unit elastic
D. none of the above

[4] Operating in the short-run, a firm is currently producing 100 units of output, with its average total cost equal to $10 and its average variable cost equal to $8. At 101 units of output, the firm’s average fixed cost will:

\[ \text{See P. 6 of Notes} \]

A. be greater than $2
B. equal $2
C. be less than $2
D. all of the above are possible.

[5] Specialization of inputs is one reason why a firm might encounter diseconomies of scale.

A. True
B. False

[6] If marginal cost is____, then average total cost must be falling.

A. below average total cost
B. equal to average variable cost
C. below average variable cost
D. All of the above
Use the following to answer questions (7) through (10):

ABC painting service uses painting equipment (denoted K) and labor (denoted L) to paint houses. Interested in weekly production (i.e., the number of houses painted per week, denoted Q), with K fixed at 3 in any given week, ABC faces the following production table:

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Note: The price of capital (denoted \( P_K \)) is 400
The price of labor (denoted \( P_L \)) is 600

[7] In any given week, ABC is operating in the short-run.

A. True
B. False

[8] The total cost of painting 3 houses per week equals:

\[ TC = P_K \cdot K + P_L \cdot L \]

A. \( 3300 \)
B. \( 2800 \)
C. \( 2700 \)
D. \( 2400 \)

[9] The average fixed cost of painting 3 houses per week equals:

\[ AFC = \frac{TFC}{Q} = \frac{1200}{3} = 400 \]

A. 367
B. 400
C. 500
D. 600

[10] The marginal cost associated with the 1st house painted is greater than 500.

A. True
B. False

\[ MC = \frac{\Delta TC}{\Delta Q} \]

\[ \Delta Q = 1, \quad \Delta L = 1 \rightarrow TC = 1800 \]

\[ MC = \frac{600}{1} = 600 \]