Unit 3 - Week 1

Assignment 1

1. A company has 2500 units of a product with a cost price of $30 each. The company is considering two options:

- Option A: Sell the product at a selling price of $40 each, with a total income of $100,000 from the sale.
- Option B: Increase the selling price to $50 each. The company expects to sell 2000 units due to increased demand, with a total income of $100,000 from the sale.

The manager wants to know which option is more profitable. Calculate the profit for each option and advise the manager. (1 mark)

2. The company decides to sell the product at a selling price of $45 each. The company is unsure if the increased demand will justify the higher selling price. The company anticipates to sell 2200 units.

(a) Calculate the total revenue from the increased demand. (3 marks)

(b) Calculate the total cost of producing 2200 units. The variable cost per unit is $20 and the fixed cost is $6000. (3 marks)

(c) Calculate the profit from selling 2200 units at $45 each. (2 marks)

(d) The company decides to sell the product at a selling price of $45 each. However, it is unsure if increasing the selling price is justifiable. The company wants to avoid selling in less than 2000 units.

   (i) If the company plans to sell exactly 2000 units, what is the total revenue? (1 mark)

   (ii) If the company plans to sell exactly 2000 units, what is the total cost? (1 mark)

   (iii) If the company plans to sell exactly 2000 units, what is the profit? (1 mark)

3. The company wants to determine the volume of the product that ensures maximum profit. It is known that the variable cost per unit is $20 and the fixed cost is $6000.

(a) The company plans to sell 2000 units at $40 each. What is the total revenue? (1 mark)

(b) The company plans to sell 2200 units at $45 each. What is the total revenue? (1 mark)

(c) The company plans to sell 2200 units at $45 each. What is the total cost? (1 mark)

(d) The company plans to sell 2200 units at $45 each. What is the profit? (1 mark)

(e) The company plans to sell 2000 units at $40 each. What is the profit? (1 mark)

(f) Calculate the profit for each unit sold at $40 and $45. (2 marks)

(g) The company wants to maximize profit. What is the profit if they sell 2200 units at $45 each? (1 mark)

4. The company plans to sell 2200 units at $45 each. The company needs to determine the range of costs that will still yield a profit. The variable cost per unit is $20 and the fixed cost is $6000.

(a) Calculate the break-even point. (2 marks)

(b) The company plans to sell 2200 units at $45 each. What is the profit at this point? (1 mark)

(c) The company plans to sell 2200 units at $45 each. What is the profit if the variable cost per unit is $25? (1 mark)

(d) The company plans to sell 2200 units at $45 each. What is the profit if the fixed cost is $7000? (1 mark)

(e) Calculate the profit for each unit sold at $40 and $45. (2 marks)

(f) If the company plans to sell 2000 units and the selling price is $40, what is the profit? (1 mark)

(g) If the company plans to sell 2200 units and the selling price is $45, what is the profit? (1 mark)

(h) The company plans to sell 2200 units at $45 each. What is the profit if the variable cost per unit is $25 and the fixed cost is $7000? (1 mark)

5. A newspaper publisher is considering two advertising campaigns. The following table shows the expected total revenue and cost for each campaign:

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Expected Revenue</th>
<th>Expected Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$200,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>B</td>
<td>$250,000</td>
<td>$150,000</td>
</tr>
</tbody>
</table>

The newspaper publisher wants to choose the campaign that yields the highest profit. Calculate the profit for each campaign and advise the publisher. (1 mark)

6. The newspaper publisher has decided to implement Campaign A. However, they are unsure if the campaign will be successful. The publisher plans to monitor the campaign's performance over the next 6 months. The following graph shows the expected revenue and cost for the next 6 months:

(a) From the graph, determine the expected revenue for the first 3 months. (1 mark)

(b) From the graph, determine the expected cost for the first 3 months. (1 mark)

(c) From the graph, determine the expected profit for the first 3 months. (1 mark)

(d) The publisher plans to monitor the campaign's performance over the next 6 months. The expected revenue and cost for the next 6 months are shown in the following graph:

   (i) From the graph, determine the expected revenue for the next 6 months. (1 mark)

   (ii) From the graph, determine the expected cost for the next 6 months. (1 mark)

   (iii) From the graph, determine the expected profit for the next 6 months. (1 mark)

(e) Calculate the profit for each unit sold at $40 and $45. (2 marks)

(f) If the company plans to sell 2000 units and the selling price is $40, what is the profit? (1 mark)

(g) If the company plans to sell 2200 units and the selling price is $45, what is the profit? (1 mark)

(h) The company plans to sell 2200 units at $45 each. What is the profit if the variable cost per unit is $25 and the fixed cost is $7000? (1 mark)