Ex. 1:
A manufacturer has a monthly fixed cost of $180,000 and a production cost of $60 for each unit produced. The product sells for $90 per unit.

Break-even Revenue, Break even quantity, or Break-even Point

\[ c(x) = 60x + 180,000 \]
\[ R(x) = 90x \]

\[ R(x) = c(x) \quad \text{or} \quad R(x) - c(x) = 0 \]

\[ 90x = 60x + 180,000 \]
\[ 30x = 180,000 \]
\[ x = 6000 \]

B.E.Q.

Point: \((x, y)\)
\[(6000, 540,000) \quad \text{B.E.P.}\]

Ex. 2
A company’s production cost per unit is $7. They sell each unit for $17. Their monthly fixed cost is $87,000. If the company produces and sells 5000 units, what is the profit earned or the loss sustained?

\[ c(x) = 7x + 87000 \quad \text{R}(x) = 17x \]

\[ \text{Profit} = 17x - [7x + 87000] = 10x - 87000 \]

\[ \text{Profit (5000)} = 10(5000) - 87000 \]
\[ = 50000 - 87000 \]
\[ = -37000 \text{ (loss)} \]