

# Question 3 – Costs

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Durable Manufacturing Company wants to introduce a new product. The company estimates that the unit variable costs would be \$8, and the fixed costs would be \$70,000.

1. If the unit selling price is \$20, what is the break-even point?

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$$\begin{aligned}0 &= (20 - 8)q - 70000 \\70000 &= 12q \\q &= 5833.\bar{3} \text{ units}\end{aligned}\tag{1}$$

2. If the unit selling price is set at \$18, the company expects to sell 15,000 units. What would be the total profit for this alternative?

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$$\begin{aligned}(18 - 8)(15000) &- 70000 \\(10)(15000) &- 70000 \\150000 &- 70000 \\&\text{profit of } \$80000\end{aligned}\tag{2}$$

3. A foreign firm has offered to produce the product at \$10 per unit. If the unit selling price is to be set at \$20, what would be the breakeven point between the decision to “make” or “buy”?

$$\begin{aligned}(20 - 10)q &= (20 - 8)q - 70000 \\10q &= 12q - 70000 \\70000 &= 2q \\q &= 35000\end{aligned}\tag{3}$$

- The decision is at breakeven point if they manufacture 35000 units.

4. If demand is estimated to be greater than this breakeven point, what should be done, make or buy? Why?

- If demand is greater than the breakeven point, then the company should make their own product. This is because when calculated, the profit per item is \$10 if the buy or \$12 if they make.