

# BUAD 307– Marketing Fundamental Fall 2021

## Break-even point

Given the following data:

- Fixed costs = \$90,000
- Variable costs per unit:
  - Direct material = \$5
  - Direct Labor = \$2
  - Direct overheads = 100% of Direct Labor
- Selling price = \$12

Compute:

1. Compute the contribution per unit
2. Break-even volume (e.g. number of products to sell to reach the break-even point)
3. Break-even sales (e.g. the amount of sales to reach the break-even point)
4. Sales required to earn a net profit of \$450,000
5. If sales are 10% and 25% above the break-even sales, determine the net profit
6. What should be the selling price per unit, if the break-even point should be brought down to 20,000 units?

## Supply and demand

1. Suppose that there is an announcement that chocolate causes cancer. What would happen to equilibrium price and quantity in the market for Godiva chocolate? Draw the graph that illustrates your answer.
2. Suppose that the price of Hershey's chocolate, a competitor of Godiva chocolate, increases. What would happen to equilibrium price and quantity in the market for Godiva chocolate? Draw the graph that illustrates your answer.
3. Suppose that the price of sugar increases. What would happen to equilibrium price and quantity in the market for Godiva chocolate? Draw the graph that illustrates your answer.

4. Suppose that a company invents a better machine for mixing the ingredients to make chocolate candies. What would happen to equilibrium price and quantity in the market for Godiva chocolate? Draw the graph that illustrates your answer.
5. Suppose the equation for demand can be expressed as  $P = 20 - Q$ . The equation for supply can be expressed as  $P = Q$ . Find the equilibrium price and quantity.
6. Suppose the equation for demand can be expressed as  $P = 40 - 2Q$ . The equation for supply can be expressed as  $P = Q$ . Find the equilibrium price and quantity.
7. Suppose the equation for demand can be expressed as  $P = 30 - Q$ . The equation for supply can be expressed as  $P = 2Q$ . Find the equilibrium price and quantity.

## Price and Cross-price elasticity

1. Yesterday, the price of envelopes was \$3 a box, and Julie was willing to buy 10 boxes. Today, the price has gone up to \$3.75 a box, and Julie is now willing to buy 8 boxes. Is Julie's demand for envelopes elastic or inelastic? What is Julie's elasticity of demand?
2. When the price of cheese increases by 20%, the quantity demanded of sausage decreases by 40%. What is the cross-price elasticity of demand for sausage and cheese?
3. The makers of a brand of potato chip know that the prices of other products might increase soon. The cross-price elasticity of potato chips and four other goods are given below.
  - a. Product W: -2
  - b. Product X: -0.5
  - c. Product Y: 1
  - d. Product Z: 3

Which product is the most complementary for chips?