

# Break-Even Analysis

How many units do you need to sell before  
you start making a profit?

$$\text{Break-Even Units Volume} = \frac{\text{Fixed Costs}}{\text{Price—Variable Costs}}$$

## Example:

*Selling Price is \$10.00 per unit*

*Variable costs are \$5.50 per unit*

*Contribution margin is \$4.50 per unit*

*Fixed costs are \$1,350.00 per month*

$$\text{Break-Even Point in Units} = \frac{\$1,350.00}{\$4.50} = 300 \text{ units per month}$$

When you sell unit #301, you will start  
Making a profit *for that month.*

(Break-Even in Dollars of Sales =  
300 units x \$10 = \$3,000)

## Pricing and Break-Even Example

You make canvas tote bags. Your competition sells a similar bag for between \$8.00 and \$11.00. You decide to price your tote bags at \$10.00 each. Let's see how many bags it will take to pay for your fixed and variable expenses, and therefore to break even.

Here's a list of your expenses:

Raw material for the tote bags: \$3.00/bag  
Lease per month: \$800.00  
Hourly labor: \$1.00/bag  
Sales commission (10%): \$1.00/bag  
Telephone per month: \$100.00

Insurance per month: \$50.00  
Shipping expenses: \$ .50/bag  
Bookkeeping per month: \$100.00  
Loan payment per month: \$300.00

Sort these expenses into **Variable Expenses** and **Fixed Expenses**:

Variable expenses:

_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

Total variable  
(per unit)                      \$ \_\_\_\_\_

Fixed expenses:

_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

Total fixed  
(per month)                      \$ \_\_\_\_\_

The **Contribution Margin** is the Selling Price per unit minus the Variable Expenses per unit.

- |  |     |          |
|--|-----|----------|
| 1. What is the Selling Price of one tote bag?              | (+) | \$ _____ |
| 2. What are the Variable Expenses associated with one bag? | (-) | \$ _____ |
| 3. What is the Contribution Margin per bag?                | (=) | \$ _____ |

*The Contribution Margin is the amount contributed from each unit of sales towards covering fixed expenses and profits.*

4. What are your total Fixed Expenses for a month?    \$ \_\_\_\_\_ per month
5. What is your Contribution Margin per bag?            \$ \_\_\_\_\_ per bag
6. How many bags must be sold to pay for your monthly Fixed Expenses? \_\_\_\_\_ bags

*Fixed Expenses divided by the Contribution Margin equals the number of bags it will take to break even.*

7. Change the selling price per bag to \$13.00. Now what is your break-even number? \_\_\_\_\_
8. What happens to the break-even number if you decide to lower the price to \$9.00?

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9. Suppose you want to make \$900.00 profit per month. How many additional bags must you sell at the \$10.00 selling price to make that profit? \_\_\_\_\_

At \$13.00? \_\_\_\_\_

At \$9.00? \_\_\_\_\_