

## Marketing arithmetic example

The cost and price information for Acme Widgets are as follows:

$$\begin{array}{ll} P = \$8 & V = \$6 \\ FC = \$100,000 & Q = 5,000 / \text{week} \end{array}$$

$$\text{Unit contribution} = 8 - 6 = \$2$$

$$\text{Weekly contribution} = 5,000 \cdot \$2 = \$10,000$$

$$\text{BEP} = 100,000 / (8 - 6) = 50,000 \text{ units}$$

$$\text{Number of weeks to break even} = 50,000 / 5,000 = 10 \text{ weeks}$$

The difference between price and variable cost is also known as “margin.” When this is expressed as a percentage of a base value, it becomes “percent margin.”

Percent margin can be calculated based on cost or price. In marketing, calculating it on price is customary since it directly reflects contribution.

$$\text{Percent margin on price} = (\text{Price} - \text{Cost}) / \text{Price}$$

In the channel, producers’ prices become wholesalers’ cost, their prices become retailers’ cost and so on. In other words, they influence each other.

We can also calculate the percent margin on cost as follows:

$$\text{Percent margin on cost} = (\text{Price} - \text{Cost}) / \text{Cost}$$

### Examples:

If the manufacturing cost of a product is \$6 and the producer wants a 25% margin on price, what should the price be?

If the margin is 25%, the cost must be 75% of the selling price. Therefore, we are looking for a number 75% of which is 6.

$$6 / 0.75 = 600 / 75 = \$8$$

Margin =  $8 - 6 = \$2$  and that is indeed 25% of the price, \$8.

If this product moves through the channel with 20% at wholesale and 37.5% at retail level markups, what will be the price for the end user?

$$\text{Wholesale price} = 8 / 0.80 = \$10$$

$$\text{Retail price} = 10 / 0.625 = \$16$$