Percent markup

In this lesson we will learn how to calculate a percent markup and how it changes the price of an item.

What is a percent markup? Well in retail, a store will buy an item for a certain price from a manufacturer. In order to make money, the store has to add to the price they paid for it and sell it to the customer for more.

The store usually does this as a percentage of the original amount, and if that's the case we call this a percent markup.

Here are three different formulas we can use to describe this:

$$\text{New Price} = \text{Original Price} + \text{Markup Amount}$$

$$\text{New Price} = \text{Original Price}\left(1 + \frac{\text{Percent Markup}}{100}\right)$$

$$\text{Markup Amount} = \text{Original Price}\left(\frac{\text{Percent Markup}}{100}\right)$$

In this formula, the "new price" is the price the end customer pays the store for the item. This is often called the "selling price."

The "original price" is the price the store paid the manufacturer for the item. This is sometimes called the "manufacturer's price" or the "original purchase price."

The "percent markup" is the percent of the original price by which the store marked up the item in order to get to the new price.

Let's look at a couple of examples.

Example

The manager of a user-car dealership purchases a used car for $\$13{,}500.00$. The percent markup on the car is $45\,\%$. What is the selling price of the car?

First, we'll find the amount of money the company added to the original price of the car. To do this, we'll find $45\,\%$ of the original price of the car.

$$45\,\% \text{ of } \$13{,}500$$

$$\frac{45}{100} \cdot \$13{,}500$$

$$\$6{,}075$$

This means the company marked up the original price by $\$6{,}075$, so now we need to add this to the original price to find the selling price.

$$\$13{,}500 + \$6{,}075$$

$$\$19{,}575$$

Let's look at an example of how to find the manufacturer's price.

Example

A bakery purchases a set of pre-made cakes from the manufacturer and sells them to their customers for $\$545.82$. The markup was $65\,\%$. What price did the bakery pay the manufacturer?

If the bakery paid x for the cakes and marked them up by $65\,\%$, then the price they're selling it to their customers for is 1.65 times the price they paid for it. We use 1.65 because the price the bakery will charge their customers for the cakes is $100\,\%$ of what they paid the manufacturer, plus $65\,\%$ of that amount for their own markup. The $100\,\%$ plus the $65\,\%$ means they're charging $165\,\%$, or 1.65 times what they paid.

$$1.65x = \$545.82$$

$$\frac{1.65x}{1.65} = \frac{\$545.82}{1.65}$$

$$x = \$330.80$$

The bakery paid $\$330.80$ for the cakes, marked them up by $65\,\%$, which was a markup of $\$215.02$ ($\$330.80 + \$215.02 = \$545.82$), and then sold them to their customers for $\$545.82$.
