

## LESSON # 20 ~ Calculating a Given Percent

% | Decimal | Fraction

### Percentage of a number

#### Method 1

Need to setup a proportion. The  $x$  goes next to the number (top).

Cross multiply & divide.

$$\frac{7}{21} = \frac{x}{100} \quad \text{or} \quad \frac{10\%}{100} = \frac{?}{25}$$

#### Method 2

Just multiply the number by the percent (convert % into a decimal and multiply with the number).

$$25 \times 10\% \\ .1$$

#### Examples

1. What is 40% of 180 smarties?  $72$

2. 2% of 123?  $2.46$

3. 75% of 100?  $75$

4. 15% of \$50.55?  $7.58$

5. Joe received 75% on his last math test.  
What did he get out of 25 points.

$$\frac{75}{100} = \frac{?}{25} \quad (18.75)$$

6. 80% of the seats at the Molson Center were sold.

Total seats at the Molson Center is 60 000.

How many seats were sold?

$$\frac{80}{100} = \frac{\quad}{60000} \quad (48000)$$

$$\begin{array}{r} \text{NOT sold} \\ \hline 20 \\ \hline 100 \end{array} = \frac{\text{12000 seats}}{60000}$$

Calculate value of 100%  
method

Need to set up a proportion. The  $x$  goes next to the 100 (bottom).

Cross multiply & divide.

$$\frac{7\%}{100} = \frac{17}{x}$$

1. 25% of the school's population attended the dance. If 200 students were at the dance, what is the school's total population?

$$\frac{25}{100} = \frac{200}{?}$$

800

2. 50 is 25% of what number?

$$\frac{50}{?} = \frac{25}{100}$$

200

- ~~3. What percent of 40 is 10?~~

~~$$\frac{?}{100} = \frac{10}{40}$$~~

Percent increase or decrease

$$\frac{x}{100} = \frac{\text{difference}}{\text{original}}$$

Example:

The price of a bike was reduced from \$205 to \$175. Calculate the percent decrease (discount)?

$$\frac{n}{100} = \frac{205 - 175}{205} \quad 14.6\%$$

or  $\frac{n}{100} = \frac{175}{205}$

Interest

% of money you owe or is owed to you.

85.4%

Example: Calculate the value of interest you would make if you invested \$2500 for 1 year at an interest rate of 12.5%.

$$\begin{array}{r} \$2500 \\ \times 12.5\% \\ \hline \$312.50 \end{array}$$

Total in bank  
\$2812.50