



# Math Study Strategies

## Math for Welding



### Using Percents

Percents are parts of **100**. For example, 25 percent means 25 parts out of 100. The percent sign is %, and a percent can be written as a fraction or a decimal.

Percents are useful in every type of profession. In welding, percents are especially useful for describing the composition of welding gases. For example, an oxy-acetylene mixture may be described as being 45% acetylene.

To change a percent to a decimal, follow these steps.

Step 1

Remove the percent sign (%).

Example 1

66%

Example 2

200%

Step 2

Multiply by .01.

$$\begin{array}{r} 66 \\ \times .01 \\ \hline .66 \end{array}$$

$$\begin{array}{r} 200 \\ \times .01 \\ \hline 2.00 \end{array}$$

To change a decimal to a percent, follow these steps.

Step 1

Multiply by 100.

Example 1

$$\begin{array}{r} .1 \\ \times 100 \\ \hline 10\% \end{array}$$

Example 2

$$\begin{array}{r} 8 \\ \times 100 \\ \hline 800\% \end{array}$$

Step 2

Add the percent sign.

Step 1

Remove the percent sign.

Example 1

$$40 \times \frac{1}{100}$$

Example 2

$$33 \frac{1}{3}$$

Step 2

Multiply by  $\frac{1}{100}$

$$^2 40 \times \frac{1}{100_5} = \frac{2}{5}$$

$$33 \frac{1}{3} = \frac{100}{3}$$

Step 3

Cancel and reduce.

$$\frac{^1 100}{3} \times \frac{1}{\cancel{100}_1} = \frac{1}{3}$$

