Use a Proportion

1. How many miles are there in 29 920 yards?

Step 1: Determine a conversion ratio for the two units, using the Imperial Conversion Table.

Using the Imperial Conversion Table, note that 1760 yd = 1 mi, which can also be written as either $\frac{1760\ yd}{1\ mi}$ *or* $\frac{1\ mi}{1760\ yd} = 1.$

Step 2: Assign a variable for the unknown, and create a second ratio using the information provided.

Let y represent the unknown number of miles.

Then, y mi = 29 920 yd and $\frac{y\ mi}{29\ 920\ yd} = 1.$

Step 3: Write a proportion with both ratios, and solve for the variable.

$$\frac{y\ mi}{29\ 920\ yd} = \frac{1\ mi}{1\ 760\ yd}$$

$$\frac{x\ mi}{\cancel{29\ 920\ yd}} \times \cancel{29\ 920\ yd} = \frac{1\ mi}{1\ 760\ \cancel{yd}} \times 29\ 920\ \cancel{yd}$$

$$x\ mi = 17\ mi$$

There are 17 miles in 29 920 yards.

2. Use the proportion strategy to complete the following conversion.

   51 ft = _____ in

$$\frac{y}{51\ ft} = \frac{12\ in}{1\ ft}$$

$$\frac{y}{\cancel{51\ ft}} \times \cancel{51\ ft} = \frac{12\ in}{1\ \cancel{ft}} \times 51\ \cancel{ft}$$

$$y = 612\ in$$

3. Use the proportion strategy to complete the following conversion.

   36 oz = _____ lbs

$$\frac{y}{36\ oz} = \frac{1\ lb}{16\ oz}$$

$$\frac{y}{\cancel{36\ oz}} \times \cancel{36\ oz} = \frac{1\ lb}{16\ \cancel{oz}} \times 36\ \cancel{oz}$$

$$y = 2.25\ lbs$$