

# Dimensional Analysis:

When you have no idea  
how to convert



First, make sure you remember  
how to multiply fractions...

$$\frac{1}{3} \cdot \frac{2}{3} = \text{?}$$

$$\frac{4}{5} \cdot \frac{5}{7} = \text{?}$$

# Dimensional Analysis

## What is it?

a problem-solving method that uses the fact that any number or expression can be multiplied by the number one without changing its value

# Conversion Factor

A fraction that equals one and is used to cancel out units while converting

Examples:

12 donuts

1 dozen

1 dozen

12 donuts

5280 ft

1 mile

# Let's do an insanely easy example...

30 pencils = \_\_\_\_\_ dozen

$$\frac{30 \text{ pencils}}{1} \times \frac{1 \text{ dozen}}{12 \text{ pencils}} = \frac{30 \text{ pencils} \cdot \text{dozen}}{12 \text{ pencils}}$$
$$= 2.5 \text{ dozen}$$

# Let's try a harder example...

1 year = \_\_\_\_\_ minutes

$$1 \text{ year} \times \frac{365 \text{ days}}{1 \text{ year}} \times \frac{24 \text{ hr}}{1 \text{ day}} \times \frac{60 \text{ min}}{1 \text{ hr}} =$$

$$= 525,600 \text{ min}$$