

Dimensional Analysis

A. Dimensional analysis is a _____ used for converting measurements. It is especially useful for converting from measurements expressed in _____ to an equivalent quantity in a _____.

B. Dimensional analysis uses _____, which identify the relationship between two values with _____ units that express the _____ quantity. These factors provide _____ to go from the starting point to the ending point.

- Examples:

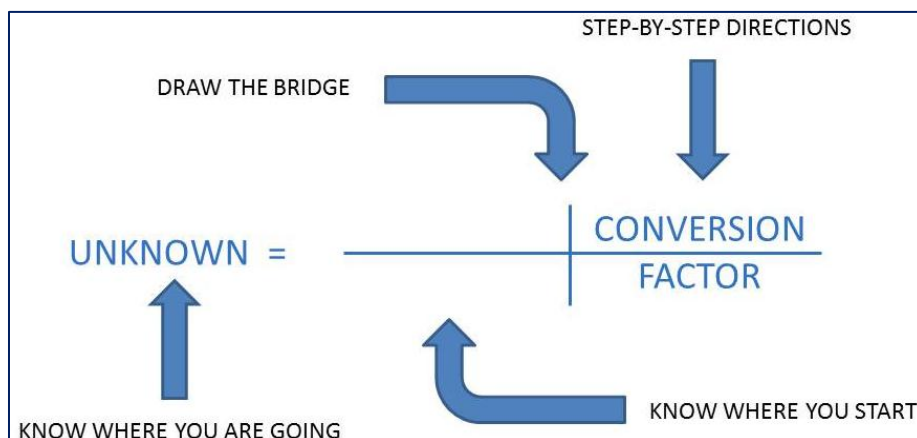
C. Conversion factors are _____ and can be expressed as _____. Each fraction can be written in _____ ways and always equals a value of _____.

- Example: If you have one dozen eggs, how many eggs do you have? _____
Therefore, _____. Written as fractions —

D. Dimensional analysis is a problem-solving method consisting of specific steps.

1. _____: identify (underline) the unknown in problem.
2. _____: identify (circle) the given in the problem.
3. _____: outlines the path to be taken from start to finish.
4. _____: determined by applicable conversion factors.

It's all in the _____!



Dimensional Analysis Practice

Example

How many kilograms are in 150 lbs?

What conversion factor(s) apply to this problem? _____

This conversion factor can be expressed as a fraction in two forms:

Write the _____, start with the _____, and then draw the _____ to connect the two quantities.

Use dimensional analysis to solve the following problems.

1) How many calories are in 42 joules?

2) How many inches are in 127 miles?

3) How many seconds are in 22 days?