Dimensional Analysis

D.A. : is a system that uses a series of fractions (called conversion factors) that coverts measurements from one kind of unit to another.

The conversion factors that are used are equal to one because the measurement on the top and on the bottom of the fraction are equal to each other.

Example:

60 seconds

 1 minute

How many hours are in 15 seconds?

1. Put the given measurement over 1 to make a fraction out of it.

15s x 1 min. x 1 hr.

 1 60 s 60 min

1. Multiply the given measurement by conversion factors until the units you don’t want cancel and the one you want doesn’t.

15s x 1 minute x 1hour

 1 60 s 60 min.

1. Multiply the top numbers by the top and bottom numbers by the bottom and divide the two answers.

15 / 3600 = .0041 hours

Use Dimensional Analysis to make the following conversions:

1. How many seconds are in 3.5 hours?
2. How many seconds are in 4.89 days?
3. How many pounds are in 150 Kg?
4. How many miles are in 800 m?

2.2 pounds = 1 Kg

1 mile = 1609 m