Unit Conversion and Dimensional Analysis

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_

Rules:

1. Identify the given measurement
2. Identify the unit that the measurement must be converted to
3. Use conversion factors (relationships between two units) that link your given unit to the final unit
4. Perform the mathematical calculations.
5. Do not forget to apply significant figures to your final answer

Guidelines:

1. A conversion factor can be written in two different ways. For example, converting centimeters and meters, we can use the conversion factor (100 cm / 1 m) or (1 m / 100 cm). The unit you want to remove from the problem should be placed opposite of the original. So, to convert from cm to m, cm is your given unit, and the cm should be in the bottom to denominator out cm from the problem.
2. The math should be the last thing you do. By first cancelling units, so that your final unit is the only one, you may easily check that the conversion has been set up correctly. The math calculation will follow this.

Example Problem:

Convert: 56.93 cm to m

Solution:

1.) The given measurement is 56.93 cm.

2.) The measurement must be converted to meters.

3.) The conversion factor(s) we need to use either has to directly relate cm and m, or chain to cancel all units except m. Luckily, we know a direct one: 100 cm is equal to 1 m. cm should be in the denominator to cancel with the original cm.

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