PHYSICS Name:

Standard-to-Metric Conversions

Much of what we measure in our daily lives uses ENGLISH units of measure. These are different than METRIC units and probably more common (for now). In order to be able to go back and forth from METRIC to ENGLISH we need to know a *conversion factor*. A conversion factor is a ratio of one unit to the next. The method we use to convert units is called the FACTOR-LABEL Method.

Recall,	ENGLISH	METRIC
	mile	kilometer
	yard	meter
	foot	centimeter
	inch	decimeter
	.	.
	.	.
	.	.

FACTOR-LABEL Method: **Ex. 10 in = ? cm**

1.) Write down what's given
2.) Remember in math when you multiply fractions, the "like factors" divide out.
3.) Write down a series of conversion factors that will result in the desired units
4.) Multiply all the numerators and divide by all the denominators
5.) Check your answer to make sure it is sensible.

How many meters are in 25 yards?

How many km^2 are in 100 square miles?

On a blank sheet of paper make the following conversions.

1. 21 in = ? cm
2. 150 in = ? m
3. 7.5 mi = ? m
4. 220 cm = ? ft
5. 10,054,000.2 kg = ? Mg
6. 175 mL = ? daL
7. 200 in = ? dm
8. 150 lb = ? kg*
9. 8.25 dm = ? ft
10. 320 yd = ? km
11. 0.44 in = ? mm
12. 25 km/hr = ? m/s
13. 120 m/s = ? mi/hr
14. 10.5 ft/s = ? m/s
15. 5.4 in/day = ? μm/ms
16. 305 cm^2 = ? m^2
17. 0.0032 ft^3 = ? m^3
18. 2.2 parsec = ? ft

EXTRA: Determine your height in meters and centimeters, your weight in Newtons, and your mass in kilograms.