

Whenever you work problems, remember the following points:

- a. Always include the units (a measurement always has two parts: a number *and* a unit).
- b. Cancel units as you carry out the calculations.
- c. Check that your final answer has the correct units. If it doesn't, you have done something wrong.
- d. Check that your final answer has the correct number of significant figures.
- e. Think about whether your answer makes sense.

Utilizing Dimensional Analysis (Factor-Label Method) and the conversion units provided below (as well as those commonly known), compute the following. **Show your set up. Show both the calculator and justified answers (sig figs).**

1. 35.2 kilograms = ? grams
2. 334.6 milligrams = ? grams
3. 25.4 centimeters = ? meters
4. 0.234 centimeters = ? millimeters
5. 224.0 milliliters = ? liters
6. 11.2 liters = ? milliliters
7. 32.8 grams = ? ounces
8. 39.37 millimeters = ? inches
9. 22.4 liters = ? quarts
10. 427 grams = ? pounds
11. 528 centimeters = ? feet
12. 382 milliliters = ? gallons
13. 50.0 pounds = ? kilograms
14. 16.0 fluid ounces = ? milliliters
15. 7.054 ounces = ? grams
16. 1.5 feet = ? centimeters
17. 248 gallons = ? liters
18. 32.4 yards = ? meters

<p><b>LENGTH</b></p> <p>1 inch = 2.540 cm                  1 mi = 1.609 km                  36 in. = 1 yd                  1 mi = 5280 ft</p>	<p><b>MASS</b></p> <p>1 lb = 453.6 g                  1 kg = 2.205 lb                  1 oz = 28.34 g                  16 oz = 1 lb</p>	<p><b>VOLUME</b></p> <p>1 qt = 0.9463 L                  1 L = 1.057 qt                  1 fl. oz = 29.57 mL                  1 gal = 4 qt                  32 oz = 1 qt</p>
---	---	--

Kilo- (k)	$10^3 = 1000$	Milli- (m)	$10^{-3} = 0.001$	Pico- (p)	$10^{-12} = 0.000000000001$
Deci- (d)	$10^{-1} = 0.1$	Micro- ( $\mu$ )	$10^{-6} = 0.000001$		
Centi- (c)	$10^{-2} = 0.01$	Nano- (n)	$10^{-9} = 0.000000001$		