Calculations and Conversions

FORMAT

The test will consist of the following new topics:

- unit analysis
- this per that
- problem solving
- temperature conversions
- conversions

You may use your calculator for this test. But, if you want partial credit, you must show your work. Attempt every problem and do not leave any blanks.

Note: You will need your calculator.

KNOW

- ❑ the conversion factors
- ❑ the density of water
- ❑ scientific notation
- ❑ change between Celsius, Fahrenheit and Kelvin

BE ABLE TO

- ❑ perform conversions using unit analysis
- ❑ calculate with significant figures
- ❑ use the metric system

REVIEW

- ❑ determine significant figures
- ❑ the SI system
- ❑ the cgs system
- ❑ the metric prefixes
- ❑ calculate density
- ❑ calculate percent error

TEST DATE: _____

PRACTICE PROBLEMS

DIRECTIONS: Complete the following conversion factors.

_____ centimeters = 1 inch   _____ liter = 1.06 quarts   _____ grams = 1 pound

_____ minutes = 1 hour   _____ feet = 1 mile   _____ inches = 1 foot

_____ seconds = 1 minute   _____ ounces = 1 cup   _____ quarts = 1 gallon

DIRECTIONS: Complete the following metric conversions.

_____ centimeters = 1 meter   _____ liter = 1000 mL   _____ grams = 2.34 kg

_____ meters = 54 cm   _____ milliliters = 50 liters   _____ grams = 1 kilogram

DIRECTIONS: Tell how many sig figs are in the following.

_____ 0.000403   _____ 3   _____ 3.400   _____ 340   _____ .340

DIRECTIONS: Perform the operations using significant figures.

_____ 12.589 + 0.12 + 1.256   _____ $\dfrac{(0.00215)(1.0244)}{12.2}$

_____ (256.9)(0.25)   _____ $\dfrac{1.009}{0.704}$

DIRECTIONS: Perform the conversion or solve the word problem.

_____ Convert 590.0 kilograms to ounces.

_____ Convert 2.90 meters per second to mph.

_____ How many seconds in one year?

_____ A swimming pool can hold 20,000 gallons of water. How many liters is that?

_____ What is the volume of an iron sample with a mass of 50.0 grams?
(Fe = 7.87 g/mL)

_____ What mass of copper will occupy 25.0 mL? (Cu = 8.92 g/mL)

"Genius is the ability to reduce the complicated to the simple." ~ C. W. Ceran