PHYSICS 11

MATH FOR PHYSICS I.

Name:_____

METRIC PREFIXES				
PREFIX	SYMBOL	NUMERICAL		EXPONENTIAL
giga	G	1,000,000,000	Number of base units in one unit with the given prefix. These units are greater than the base unit.	10^{9}
mega	M	1,000,000		10^{6}
kilo	k (K)	1,000		10^{3}
hecto	h (H)	100		10^{2}
deca	da	10		10^{1}
		1	Base unit.	10^{0}
deci	d	0.1	A unit with the given prefix is a fraction of the base unit. These units are smaller than the base unit.	10^{-1}
centi	c	0.01		10^{-2}
milli	m	0.001		10^{-3}
micro	μ	0.000 001		10^{-6}
nano	n	0.000 000 001		10^{-9}
pico	p	0.000 000 000 001		10^{-12}

$$1\ mL = 1\ cm^3$$

Volume =	Capacity =
Units of volume:	Units of capacity:

1. Fill in the blanks:

   There are _____ centimeters in a kilometer.

   There are _____ milliliters in a liter.

   There are _____ micrometers in a meter.

   A nanogram is one _____ of a milligram because one milligram is

   _____ of a gram and there are _____ nanograms in one gram.

2. Convert the following. Do not round.

15.6 cm	m
29 L	mL
569 μg	g
45 dm	km
56 min	yr
0.056 kg	mg
12.09 m	nm
67.102 cL	L
478,034 mg	kg
31 km	mm

3. Round to the nearest thousandth.

15.60486 =	0.999999 =
0.01034 =	45.090909 =
156.01598 =	79.15 =
1.00961 =	0.00000029 =
125.0999 =	1.00009 =

4. Isolate for the unknown:

$3x + 5 = 2$	$3x - (-2x) + 5 = -25$
$-5x + 4 = 2x + 6$	$\frac{5}{x} = \frac{x}{45}$
$\frac{30}{x} = \frac{6}{8}$	BONUS: $\frac{30}{x} + \frac{2}{3x} + \frac{1}{6} + 2 = \frac{6}{8}$

5. What do you know about scientific notation? Give **2 examples of scientific notation and clearly state how to write the given value in full notation.**

_____ = _____

_____ = _____

Rules for writing numbers in scientific notation:

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VOCABULARY SPECIFIC TO PHYSICS (I):
