Chemistry Quiz #1 – SNC 1D

1. For each of the following, identify as an:
   - element
   - compound
   - solution
   - colloid
   - suspension
   - mechanical mixture

toothpaste	colloid
potassium	element
kool-aid	solution
table sugar (a.k.a. sucrose), chemical formula is $C_{12}H_{22}O_{11}$	compound
muddy water	suspension
a tree	mechanical mixture
potassium aluminum sulphate, chemical formula is $KAl(SO_4)_2$	compound
silver metal	element
air	solution
a simple golden ring composed of 75% gold, 12.5% copper, 12.5% silver	solution

2. What is the key difference between a chemical change and a physical change?

   chemical change produces a new substance

   (physical change is a change of state or particle size)

3.   Give one example of a quantitative physical property that can
     be used to identify a substance.

   melting point, boiling point, density

mega M	kilo k	hepto h	deca da	**base unit**	deci d	centi c	milli m	micro µ

←	←	←	←	←	←	←	←
÷1000	÷10	÷10	÷10	÷10	÷10	÷10	÷1000
→	→	→	→	→	→	→	→
x1000	x10	x10	x10	x10	x10	x10	x1000

4.   Determine the density in mg/mL of pure silver given that a
     25.236 g sample of silver occupies a volume of 2.403 L. Use
     the full format followed in class.

m = 25.236 g ➜ 25 236 mg D = ? (mg/mL) V = 2.403 L ➜ 2 403 mL	$D = \dfrac{m}{V}$ $D = \dfrac{25\ 236\ mg}{2\ 403\ mL}$ D = 10.502 mg/mL

5.   Determine the volume in L of 500 kg of table salt (NaCl) if
     the density of table salt is 2.16 g/cm^3

m = 500 kg ➜ 500 000 g D = 2.16 g/cm^3 or g/mL V = ? (L)	$V = \dfrac{m}{D}$ $V = \dfrac{500\ 000\ g}{2.16\ g/mL}$ V = 231481 mL V = 231.481 L