Exam 1 (Chapters 1, 2, part 3 beginning) **SPRING 2017**

1. A medicine with the dosage of 1.5mg/kg of weight is ordered for a child weighing 74.8lbs. The medicine is available as 125mg/2mL. How many mL must the nurse administer? Show all work and record your answer with the proper number of significant figures.

\*Conversion factors do NOT affect sig figs.

\*2.21lbs per kg

1. Magnesium has three naturally occurring isotopes: Mg-24 (23.985 amu) with 78.99% abundance, Mg-25 (24.986 amu) with 10.00% abundance, and a third isotope. Calculate the mass of the 3rd isotope to three places past the decimal. ALL WORK must be shown.

(Fractional Abundance of A x Mass of A) + (Fractional Abundance of B x Mass of B) +……. = Average Atomic Weight

1. Calculate the thickness in mm of a sheet of aluminum foil measuring 15.59cm by 17.00cm. The mass of the sheet is 0.88g and the density of aluminum is 2.70 g/mL. All work must be shown. (Hint: don’t forget to find volume and area!)
2. Calculate the number of atoms in 4.520 x 10-2 kilograms of potassium metal. All work must be shown and record your answer to the proper number of significant figures.

\*Conversion factors do NOT affect sig figs.

1. Calculate the moles of bromine represented by 5.71 x 109 micrograms. All work must be shown and record your answer to the proper number of significant figures.

\*Conversion factors do NOT affect sig figs.

6. Complete the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| Isotopic Symbol |  |  | 204Pb2+ |
| Protons | 24 | 34 |  |
| Neutrons | 29 | 46 |  |
| Electrons |  |  |  |
| Charge | 3+ | 2- |  |

7. Give the formula for the following:

* 1. Disulfur tetrahydride
  2. Sulfurous acid
  3. Copper (II) nitrate

8. Write the proper name for the following: (spelling counts!)

a. HClO4

b. PCl5

c. Fe(OH)3