



Name:

10/05/08

Assignment #12: More on Moles

1. Find the molar mass of the following molecules:

a) Carbon Dioxide (CO_2)

e) Aluminum Iodide (AlI_3)

b) Salt (NaCl)

f) Potassium Permanganate (KMnO_4)

c) Hydrogen Peroxide (H_2O_2)

g) Lithium Hydroxide (LiOH)

d) Hydrochloric Acid (HCl)

h) Sugar ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$)

2. What percentage of the mass of water is provided by oxygen?

3. How many moles is 300 g of copper?

4. You want to measure out 3 moles of Magnesium Sulfate (MgSO_4). What is the mass that you need to have?

5. You have a silver necklace that has a mass of 250 grams.

a) How many moles of silver do you have?

b) How many atoms of silver is this?



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6. You want to fill a balloon with 2 moles of helium.

- a) What is the molar mass of helium?
- b) What is the mass of two moles of helium?
- c) Why doesn't taking the mass of the helium on a triple-beam balance work?
- d) If helium has a density of 0.0001786 g/cm^3 , what volume will your balloon need to be to contain two moles of helium?

7. You have 250 mL of water.

- a) What is the density of water?
- b) What is the mass of 250 mL of water?
- c) What is the mass of one mole of water?
- d) How many moles of water are present?
- e) How many molecules are present?
- f) How many oxygen atoms are present?
- g) How many hydrogen atoms are present?