ATOMIC MASS UNITS AND THE MOL

NAME _____ SECTION _____

1. The atomic mass unit (amu) is related to grams in the following way:

$$1 \text{ amu} = 1.66054 \times 10^{-24} \text{ g}$$

Using this relationship calculate the mass, in grams, of:

a. a gallium atom that has an isotopic mass of 62.96 amu.

b. a molecule of the element bromine.

c. one formula unit of KI.

2. Calculate the mass, in grams, of each of the following:

a. 1000 gallium atoms.

b. 6.023×10^{23} gallium atoms.

c. 6.023×10^{23} molecules of Br_2.

d. 6.023×10^{23} formula units of KI.

3. What is interesting about the answers you calculated in 2b, 2c, and 2d with regard to the information in 1a, 1b, and 1c respectively?

4. What is the mass of 6.023×10^{23} molecules of C_8H_{18}?

5. Answer each of the following:

   a. How many atoms of hydrogen in one molecule of H_2O?

   b. How many atoms of oxygen in one formula unit of $Pb(NO_3)_2$?

   c. How many atoms of carbon in 1 mol of $C_6H_{12}O_6$?