WORKSHOP 5: NAME _____
Mole Conversions

Section _____

1. Calculate the molar mass of:

a. Iron (III) bromate

b. Aluminum oxalate

c. Lithium Bicarbonate

d. Lead (II) Arsenate

When you are given a problem that involves conversions among moles, grams, number of particles, it is helpful to analyze the problem, write a road-map, consider what factors are available, set up the problem(s) using dimensions, put in the numbers, and then do the arithmetic. Recall: 1 mole = 6.022×10^{23} particles (i.e. atoms or molecules or ions)

Be sure to include all dimensions in your set-ups for each of the following problems. The answers should be rounded off to the correct number of significant figures. Use scientific notation for very large or very small numbers.

2. 80.12 g potassium iodite how many moles of potassium iodite?

3. What is the mass of 0.5142 moles of Zinc perbromate?

4. How many molecules are in 5.36 moles of propane gas, C_3H_8 ?

5. How many molecules of ammonia are present in 8.42 g of ammonia?

6. Find the weight, in grams, of <u>one atom</u> of platinum.

7. How many atoms of titanium are present in 701.9 µg of titanium?

8. Given a sample containing 7.831×10^{10} molecules of nitrobenzene ($C_6H_5NO_2$), answer the following questions.

a. How many moles of compound does this represent?

b. How many grams of this compound are there?

c. How many grams of carbon are there?

d. How many nitrogen atoms are there?

9. Given 1.82×10^4 mg of diphosphorous pentoxide:

a. How many millimoles (mmoles) are there?

b. How many molecules are there?

c. How many grams of phosphorous are there?

d. How many moles of oxygen atoms are there?

10. How many mL of Br_2 (l) with a density of 3.12 g/mL must you dispense to have 1.56 mole (mol) of Br_2 (l).