Mole Conversion Worksheet   Name:_____

      This is one part of chemistry that will follow us from the first days of class to the end of class. Learn how to do it now, and you will succeed; if you are having trouble, GET HELP <u>NOW.</u> You MUST get a 100% on this page before I will accept it from you.

Step 1: Determine what you are solving for: moles or grams.
Step 2: Create a conversion factor by using your periodic table to find the atomic weight of the element/compound you are given.
Step 3: Write what you know, in a fraction, over 1.
Step 4: In a second fraction, place your labels so that the bottom label will cancel out the top label; whatever label you are trying to solve for should then go on the top.
Step 5: Cancel the label, then punch the numbers in on your calculator.

Example: You are massing a 24 K gold chain, and find that it weighs 400 grams. Determine how many moles of Gold atoms you have.

Steps 1: Obviously, you are solving for moles.
Step 2: Looking at the periodic table, you find that gold weighs 197 AMU, or 197 grams per mole. Your conversion factor is then 1 mole=197 grams.
Step 3: We know (or we are given) the weight of the chain, in grams. Write this over 1:

$$\frac{400\ g}{1}$$

Step 4: The second fraction, the label we are trying to get rid of must go on the bottom; this will tell us how to align our conversion factor:

$$\frac{1\ mole}{197\ g}$$

Step 5: Now our labels will cancel; this will give us an easy-to-solve multiplication problem.

$$\frac{400\ \cancel{g}}{1} \times \frac{1\ moles}{197\ \cancel{g}} \ —\ \frac{400 \times 1\ moles}{197} \ —\ 2.03\ mol\ Au$$

Now, for you to try:
1. You have 23 moles of Tantalum (Ta). How many grams is this?