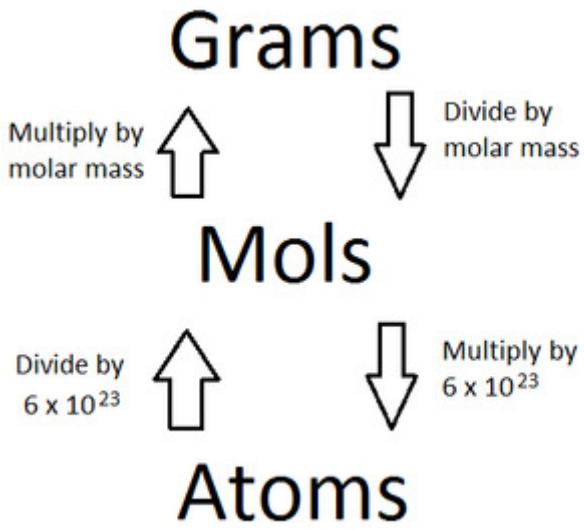
MOLAR CONVERSIONS…mathematically relate the number of moles of a substance to the number of atoms and also to a measureable mass (molar mass). **Use the area below to record the notes we take at the beginning of class that will allow us to solve these types of problems.**

SUPER IMPORTANT MOLE INFORMATION TO REMEMBER:

1 mole = 6.022 x 10^{23} atoms (or particles)

Molar mass (in g/mol) = atomic mass (amu) – BOTH FOUND ON PERIODIC TABLE**

****This relationship is possible because Avogadro experimentally determined there are 6.022 x 10^{23} atoms in 12 grams of Carbon-12**



MOLES to MASS

Example #1: What is the mass in grams of 3.50 mol of the element copper, Cu?

MASS to MOLES

Example #2: A chemist produced 11.9 g of aluminum, Al. How many moles of aluminum were produced?

ATOMS to MOLES

Example #3: How many moles of silver, Ag, are in 3.01×10^{23} atoms of silver?

MOLES TO ATOMS

Example #4: How many atoms of aluminum, Al, are in 2.75 mol of aluminum?

ATOMS to MASS

Example #5: What is the mass in grams of 1.20 x 10 8 atoms of copper, Cu?

MASS to ATOMS

Example #6: How many atoms of sulfur, S, are in 4.00 g of sulfur?