

**Mole Unit Ws #5 Molar Conversions**

Solve these problems using Dimensional Analysis. Give your answer in correct scientific notation and significant figures! Show all work!

1. How many moles are there in .028g of Fe?  $5.00 \times 10^{-4}$  mole Fe
2. How many atoms are there in .028g of Fe?  $3.01 \times 10^{20}$  atoms
3. How many grams are represented by .500 moles of AgCl? **71.8 g AgCl**
4. How many molecules are there in .500 moles of AgCl?  $3.01 \times 10^{23}$  AgCl
5. How many moles are represented by  $1.00 \times 10^{1}$  atoms of Uranium?  $1.66 \times 10^{-23}$  mol U
6. What is the mass of  $1.00 \times 10^{1}$  atoms of Uranium?  $6.97 \times 10^{-26}$  g U
7. How many molecules are there in .022 moles of Br<sub>2</sub>?  $1.32 \times 10^{22}$  molecules Br<sub>2</sub>
8. How many atoms are there in 5.03g of mercury?  $1.51 \times 10^{22}$  atoms Hg
9. How many molecules are there in .0175g of NaNO<sub>3</sub>?  $1.24 \times 10^{20}$  molecules
10. What is the mass in grams of  $1.20 \times 10^8$  atoms of copper?  $1.27 \times 10^{-14}$  g C
11. How many atoms of Sulfur are in 4.00 g of sulfur?  $7.53 \times 10^{22}$  atoms S
12. What mass of gold contains the same number of atoms as 9.0 g of aluminum? **65.7 g Au**
13. Which has more atoms, 6 moles of Carbon or 6 moles of lead? They are the same. **A mole of anything has  $6.02 \times 10^{23}$**
14. Which has more mass, 6 moles of Carbon or 6 moles of lead? **Lead**
15. Which is more fun, doing mole conversions or having all of your hair pulled out one strand at a time?