

Mole HW #1 NAME \_\_\_\_\_

SHOW WORK BELOW AND ON THE BACK.

Answers without work = X.

1. How many atoms are in 2.00 moles of aluminum?
2. How many molecules are in 1.00 mole of  $\text{CO}_2$ ?
3. How many atoms are in 3.50 moles of titanium?
4. How many moles are in  $1.50 \times 10^{23}$  molecules  $\text{NH}_3$  (ammonia)
5. How many moles are in  $10.0 \times 10^{12}$  molecules  $\text{O}_2$  (that's one billion)
6. How many moles are in  $6.02 \times 10^{22}$  molecules of  $\text{Br}_2$
7. How many moles are in  $4.81 \times 10^{24}$  atoms of Li (lithium)
8. How many grams are in 2.00 moles of aluminum?
9. How many grams are in 1.00 moles  $\text{CO}_2$ ?
10. How many grams in 3.50 moles of titanium?

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Mole HW #2

Name: \_\_\_\_\_

Write the formula of each of these 4 compounds correctly, then calculate the MOLAR MASS of each one. If you didn't look at table E you probably got the formulas incorrect.

Ammonium Phosphate

Lithium Dichromate

Barium Hydrogen Sulfate

Gold I Thiosulfate

Mole HW #3 Name \_\_\_\_\_

1. You find a jar with 209 gm. of sodium hypochlorite.  
How many formula units did you find?  
(The molar mass of NaClO is 74 g/mole)
2. You have 125 g OF<sub>2(G)</sub> STP. How many grams are oxygen?
3. You have 125 g OF<sub>2(G)</sub> STP. How many grams are fluorine?
4. You have 244 g of tantalum bromide. How many grams are tantalum?
5. You have 244 g of tantalum bromide. How many grams are bromine?

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Mole HW #4 \_\_\_\_\_

1. You have a balloon containing 302 liters of nitrogen gas at STP. What does the mass of this gas?
2. There are 185 grams of sucrose, with this formula:  $C_{12}H_{22}O_{11}$  in a batch of chocolate chip cookies that you just ate. How many grams were just carbon?
3. In these sucrose, how many grams are just oxygen?

Write the EMPIRICAL FORMULAS for each of these compounds

4.  $C_6H_{12}$
5.  $C_{10}H_{22}$
6.  $C_{10}H_{24}$
7.  $C_{10}H_{18}$
8.  $C_2H_6$
9.  $C_{22}H_{44}$
10.  $C_6H_{12}O_6$

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