

Name \_\_\_\_\_

1. Name the following compounds. [3 pts]

Formula	Name
KCl	
Cu(NO <sub>3</sub> ) <sub>2</sub>	
N <sub>2</sub> O	

2. True or False. [3 pts]

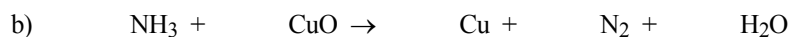
- a) FeO is iron(I) oxide.
- b) The subscript 3 in the formula NH<sub>3</sub> indicates that there are 3 moles of H in 1 mole of the compound.
- c) Consider the reaction, N<sub>2</sub> + 2O<sub>2</sub> → N<sub>2</sub>O<sub>4</sub>. If 5.00 moles of O<sub>2</sub> are reacted with excess N<sub>2</sub>, 10.0 moles of N<sub>2</sub>O<sub>4</sub> will be produced. (Assume complete reaction)

3. What is the **mass** (in g) of 0.545 moles of titanium (Ti)? **Homework Problem** [2 pts]

4. How many **O atoms** are in 2.00 moles of N<sub>2</sub>O<sub>4</sub>? Circle the correct answer. [3 pts]

- a)  $7.53 \times 10^{22}$     b)  $6.02 \times 10^{23}$     c)  $1.20 \times 10^{24}$     d)  $2.41 \times 10^{24}$     e)  $4.82 \times 10^{24}$

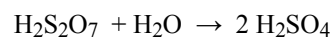
5. Balance the following equations. **Similar to a homework problem.** [4 pts]



6. A compound has an empirical formula of  $\text{CH}_2$ . Its molar mass is 84 g/mol. What is the **molecular formula** of the compound? [3 pts]

7. A compound containing C, H, and O is 54.53% C and 9.15% H by mass. The remainder is O. Determine the **empirical formula** of this compound. **Similar to a homework problem.** [5 pts]

8. How many **grams** of  $\text{H}_2\text{S}_2\text{O}_7$  are required to react with 3.67 grams of  $\text{H}_2\text{O}$ ? **Homework Problem** [5 pts]



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1 mole =  $6.022 \times 10^{23}$  particles  
Molar mass C = 12.01 g/mol  
Molar mass Ti = 47.88 g/mol

Molar mass S = 32.07 g/mol  
Molar mass O = 16.00 g/mol

Molar mass N = 14.01 g/mol  
Molar mass H = 1.008 g/mol