

## Molar Mass & Mole Conversions

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

**Part I - MOLAR MASS:** Calculate for each. Be sure to include correct units.

1. NiO

4. iron (II) oxide

2. H<sub>2</sub>O

5. sodium hydroxide

3. BaF<sub>2</sub>

6. aluminum fluoride

**Part II - MOLE CONVERSIONS:** Mixed practice. *HINT: Determine if it is a 2-step or 3-step mole conversion first.*

7. How many grams of rubidium chloride are in  $8.66 \times 10^{26}$  formula units?

8. How many formula units are in 10.9 moles of copper (II) sulfate?

9. How many moles of magnesium chloride are in 250. grams?

10. How many grams of ammonia (NH<sub>3</sub>) are in  $2.55 \times 10^{27}$  molecules?

11. How many molecules of bromine are in 4.65 moles of bromine?
12. How many grams of methane gas ( $\text{CH}_4$ ) are in 13.4 moles of methane gas?
13. How many grams of silver are in  $1.33 \times 10^{25}$  atoms of silver?
14. How many formula units of strontium oxide are in  $1.49 \times 10^5$  grams?
15. How many moles of sodium chloride are in  $5.33 \times 10^{25}$  formula units?
16. How many grams of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) are in 0.141 moles of glucose?
17. **(CHALLENGE)** - How many oxygen atoms (O) are in 200. grams of aluminum sulfate?
18. **(CHALLENGE)** - How many hydrogen atoms (H) are in 5.02 grams of methane ( $\text{CH}_4$ )?