

## ELEMENTS AND THEIR SYMBOLS

Name \_\_\_\_\_

Write the symbols for the following elements.

- oxygen \_\_\_\_\_
- hydrogen \_\_\_\_\_
- chlorine \_\_\_\_\_
- sodium \_\_\_\_\_
- fluorine \_\_\_\_\_
- carbon \_\_\_\_\_
- helium \_\_\_\_\_
- nitrogen \_\_\_\_\_
- copper \_\_\_\_\_
- sulfur \_\_\_\_\_
- magnesium \_\_\_\_\_
- manganese \_\_\_\_\_
- neon \_\_\_\_\_
- bromine \_\_\_\_\_
- phosphorus \_\_\_\_\_
- silver \_\_\_\_\_
- lead \_\_\_\_\_
- iron \_\_\_\_\_
- calcium \_\_\_\_\_
- potassium \_\_\_\_\_

Write the name of the element that corresponds to each of the following symbols.

- Cu \_\_\_\_\_
- K \_\_\_\_\_
- C \_\_\_\_\_
- Au \_\_\_\_\_
- Zn \_\_\_\_\_
- Pb \_\_\_\_\_
- Fe \_\_\_\_\_
- Na \_\_\_\_\_
- S \_\_\_\_\_
- Al \_\_\_\_\_
- Ca \_\_\_\_\_
- Ag \_\_\_\_\_
- P \_\_\_\_\_
- O \_\_\_\_\_
- I \_\_\_\_\_
- Sn \_\_\_\_\_
- H \_\_\_\_\_
- F \_\_\_\_\_
- Ni \_\_\_\_\_
- Hg \_\_\_\_\_

## NUMBER OF ATOMS IN A FORMULA

Name \_\_\_\_\_

Determine the number of atoms in the following chemical formulas.

- |                              |       |   |       |
|------------------------------|-------|---|-------|
| NaCl                         | _____ | 11. $\text{Cu}(\text{NO}_3)_2$                    | _____ |
| $\text{H}_2\text{SO}_4$      | _____ | 12. $\text{KMnO}_4$                               | _____ |
| $\text{KNO}_3$               | _____ | 13. $\text{H}_2\text{O}_2$                        | _____ |
| $\text{CaCl}_2$              | _____ | 14. $\text{H}_3\text{PO}_4$                       | _____ |
| $\text{C}_2\text{H}_6$       | _____ | 15. $(\text{NH}_4)_3\text{PO}_4$                  | _____ |
| $\text{Ba}(\text{OH})_2$     | _____ | 16. $\text{Fe}_2\text{O}_3$                       | _____ |
| $\text{NH}_4\text{Br}$       | _____ | 17. $\text{NaC}_2\text{H}_3\text{O}_2$            | _____ |
| $\text{Ca}_3(\text{PO}_4)_2$ | _____ | 18. $\text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2$ | _____ |
| $\text{Al}_2(\text{SO}_4)_3$ | _____ | 19. $\text{Hg}_2\text{Cl}_2$                      | _____ |
| $\text{Mg}(\text{NO}_3)_2$   | _____ | 20. $\text{K}_2\text{SO}_3$                       | _____ |

## GRAM FORMULA MASS

Name \_\_\_\_\_

Determine the gram formula mass of each of the following compounds.

- |                                 |       |   |       |
|---------------------------------|-------|---|-------|
| 1. NaCl                         | _____ | 11. $\text{Cu}(\text{NO}_3)_2$                    | _____ |
| 2. $\text{H}_2\text{SO}_4$      | _____ | 12. $\text{KMnO}_4$                               | _____ |
| 3. $\text{KNO}_3$               | _____ | 13. $\text{H}_2\text{O}_2$                        | _____ |
| 4. $\text{CaCl}_2$              | _____ | 14. $\text{H}_3\text{PO}_4$                       | _____ |
| 5. $\text{C}_2\text{H}_6$       | _____ | 15. $(\text{NH}_4)_3\text{PO}_4$                  | _____ |
| 6. $\text{Ba}(\text{OH})_2$     | _____ | 16. $\text{Fe}_2\text{O}_3$                       | _____ |
| 7. $\text{NH}_4\text{Br}$       | _____ | 17. $\text{NaC}_2\text{H}_3\text{O}_2$            | _____ |
| 8. $\text{Ca}_3(\text{PO}_4)_2$ | _____ | 18. $\text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2$ | _____ |
| 9. $\text{Al}_2(\text{SO}_4)_3$ | _____ | 19. $\text{Hg}_2\text{Cl}_2$                      | _____ |
| 10. $\text{Mg}(\text{NO}_3)_2$  | _____ | 20. $\text{K}_2\text{SO}_3$                       | _____ |

## PERCENTAGE COMPOSITION

Name \_\_\_\_\_

Solve the following problems.

- |  |               |
|--|---------------|
| 1. What is the percentage of carbon in $\text{CO}_2$ ?                       | Answer: _____ |
| 2. How many grams of carbon are in 25 g of $\text{CO}_2$ ?                   | Answer: _____ |
| 3. What is the percentage of sodium in NaCl?                                 | Answer: _____ |
| 4. How many grams of sodium are in 75 g of NaCl?                             | Answer: _____ |
| 5. What is the percentage of oxygen in $\text{KClO}_3$ ?                     | Answer: _____ |
| 6. How many grams of oxygen can be obtained from 5.00 g of $\text{KClO}_3$ ? | Answer: _____ |
| 7. What is the percentage of silver in $\text{AgNO}_3$ ?                     | Answer: _____ |
| 8. How many grams of silver can be recovered from 125 g of $\text{AgNO}_3$ ? | Answer: _____ |
| 9. What is the percentage of gold in $\text{AuCl}_3$ ?                       | Answer: _____ |
| 10. How many grams of gold can be recovered from 35.0 g of $\text{AuCl}_3$ ? | Answer: _____ |