

Name: Key  
 Hour: \_\_\_\_\_ Date: \_\_\_\_\_

**Chemistry: Balancing Chemical Equations**

Directions: First, balance each of the chemical equations below. Then, classify each reaction as **synthesis**, **decomposition**, **single-replacement**, or **double-replacement**. To earn full credit, write the words out when classifying.

- | Balance the equation...  | ...and classify it. |
|--|---------------------|
| 1. $2 \text{Sb} + 3 \text{Cl}_2 \rightarrow 2 \text{SbCl}_3$                                       | <u>Syn</u>          |
| 2. $2 \text{Mg} + 1 \text{O}_2 \rightarrow 2 \text{MgO}$   | <u>Syn</u>          |
| 3. $1 \text{CaCl}_2 \rightarrow 1 \text{Ca} + 1 \text{Cl}_2$                                       | <u>Decomp</u>       |
| 4. $2 \text{NaClO}_3 \rightarrow 2 \text{NaCl} + 3 \text{O}_2$                                     | <u>Decomp</u>       |
| 5. $1 \text{Fe} + 2 \text{HCl} \rightarrow 1 \text{FeCl}_2 + 1 \text{H}_2$                         | <u>SR</u>           |
| 6. $1 \text{CuO} + 1 \text{H}_2 \rightarrow 1 \text{Cu} + 1 \text{H}_2\text{O}$                    | <u>SR</u>           |
| 7. $2 \text{Al} + 3 \text{H}_2\text{SO}_4 \rightarrow 1 \text{Al}_2(\text{SO}_4)_3 + 3 \text{H}_2$ | <u>SR</u>           |
| 8. $1 \text{MgBr}_2 + 1 \text{Cl}_2 \rightarrow 1 \text{MgCl}_2 + 1 \text{Br}_2$                   | <u>SR</u>           |
| 9. $1 \text{SnO}_2 + 2 \text{C} \rightarrow 1 \text{Sn} + 2 \text{CO}$                             | <u>SR</u>           |
| 10. $1 \text{Pb}(\text{NO}_3)_2 + 1 \text{H}_2\text{S} \rightarrow 1 \text{PbS} + 2 \text{HNO}_3$  | <u>DR</u>           |
| 11. $2 \text{HgO} \rightarrow 2 \text{Hg} + 1 \text{O}_2$  | <u>Decomp</u>       |
| 12. $2 \text{KClO}_3 \rightarrow 2 \text{KCl} + 3 \text{O}_2$                                      | <u>Decomp</u>       |
| 13. $1 \text{N}_2 + 3 \text{H}_2 \rightarrow 2 \text{NH}_3$  | <u>Syn</u>          |
| 14. $2 \text{NaBr} + 1 \text{Cl}_2 \rightarrow 2 \text{NaCl} + 1 \text{Br}_2$                      | <u>SR</u>           |
| 15. $1 \text{Zn} + 2 \text{AgNO}_3 \rightarrow 1 \text{Zn}(\text{NO}_3)_2 + 2 \text{Ag}$           | <u>SR</u>           |
| 16. $1 \text{Sn} + 2 \text{Cl}_2 \rightarrow 1 \text{SnCl}_4$                                      | <u>Syn</u>          |
| 17. $1 \text{Ba}(\text{OH})_2 \rightarrow 1 \text{BaO} + 1 \text{H}_2\text{O}$                     | <u>Decomp</u>       |