

Classify each equation as S (synthesis), D (decomposition), or SR (single replacement):

- $F_2 + 2NaCl \rightarrow 2NaF + Cl_2$
- $2NH_3 \rightarrow 3H_2 + N_2$
- $Cr + I_2 \rightarrow CrI_2$
- $2Al_2O_3 \rightarrow 4Al + 3O_2$
- $O_2 + 2H_2 \rightarrow 2H_2O$
- $2NH_4Br + Cl_2 \rightarrow 2NH_4Cl + Br_2$
- $3Sn + 2Au(NO_3)_2 \rightarrow 2Au + 3Sn(NO_3)_2$
- $S_8 + 12O_2 \rightarrow 8SO_3$
- $CH_4 \rightarrow C + 2H_2$
- $Br_2 + I_2 \rightarrow 2IBr$

Quick Check

6. silver + sulfur  $\rightarrow$  Silver Sulphide  
 $16Ag + S_8 \rightarrow$
7. chromium + oxygen\*  $\rightarrow$  Chromium III Oxide  
 $Cr + O_2 \rightarrow$   $S_8 + 8H_2 = S_8$
8. aluminum + bromine  $\rightarrow$
9. sodium + iodine  $\rightarrow$
10. hydrogen + oxygen  $\rightarrow$
11. aluminum + oxygen  $\rightarrow$

\* Remember Diatomic Naming

1) Please label as S (Synthesis), D (Decomposition) or SR (Single Replacement)

2) Please Predict the Product...

3) Balance each Equation

Remember!  
 Synthesis  
 $A + B \rightarrow AB$   
 element + element  $\rightarrow$  Compound  
 Decomposition  
 $AB \rightarrow A + B$   
 Compound  $\rightarrow$  element + element

Single Replacement - A is a metal  
 $A + BC \rightarrow B + AC$   
 element compound element compound  
 $D + BC \rightarrow C + BD$   
 Dis a non-metal

- 7. sodium chlorate  $\rightarrow$  Sodium Chloride + Oxygen  
 $2NaClO_3 \rightarrow 2NaCl + 3O_2$
- 8. potassium chlorate  $\rightarrow$  Potassium Chloride + Oxygen  
 $KClO_3 \rightarrow$
- 9. sulfuric acid  $\rightarrow$  Water + Sulfur Trioxide  
 $H_2SO_4$
- 10. carbonic acid  $\rightarrow$  Water + Carbon Dioxide  
 $H_2CO_3$

- 11. aluminum oxide  $\rightarrow$
- 12. silver oxide  $\rightarrow$

- ~~14.~~ 15.  $Br_2 + CaI_2 \rightarrow I_2 + CaBr_2$
- 16.  $Al + HCl \rightarrow$
- 17.  $Mg + HCl \rightarrow$
- 18.  $Zn + H_2SO_4 \rightarrow$
- 19.  $Fe + CuSO_4 \rightarrow$
- 20.  $Cl_2 + MgI_2 \rightarrow$