

Chemical Reactions: SOL Review #4

Name: _____

Chapter 9

Core Concepts: **Balancing Equations**
Identify Type of Reaction

Fringe Concepts:

Counting Atoms (Subscripts)
Law of Conservation of Mass

1) What is the difference between the classification of the following reactions?



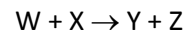
They are both double replacement reactions. However, the reaction on the left is a neutralization reaction: Acid + Base \rightarrow Water + Salt.

2) How many oxygen atoms are represented in each of the following?

**Balancing Equations**

- 3) $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$
 4) $3\text{AgNO}_3 + \text{AlCl}_3 \rightarrow 3\text{AgCl} + \text{Al}(\text{NO}_3)_3$
 5) $2\text{Al} + 3\text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + 3\text{H}_2$
 6) $3\text{Ca}(\text{OH})_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow 3\text{CaSO}_4 + 2\text{Al}(\text{OH})_3$
 7) $\text{Mg}(\text{OH})_2 + 2\text{HCl} \rightarrow \text{MgCl}_2 + 2\text{H}_2\text{O}$
 8) $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$
 9) $\text{C}_2\text{H}_4 + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 2\text{H}_2\text{O}$
 10) $3\text{Ca}(\text{NO}_3)_2 + 2\text{H}_3\text{PO}_4 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + 6\text{HNO}_3$

11) How many grams of product Z will be formed if 12.0 g of W react with 10.0 g of X to form 8.0 g of product Y in the reaction shown? **14.0 g**

**Chemical Equations**

(A) Complete and balance the equation showing both reactants and products.

(B) Label the reaction type in the left column as synthesis (S), decomposition (D), single replacement (SR), or double replacement (DR).

 S 12) sodium + nitrogen \rightarrow  SR 13) aluminum iodide + chlorine \rightarrow  DR 14) magnesium nitrate + iron (III) phosphide \rightarrow  D 15) aluminum bromide \rightarrow 