Name _____ Date _____ Class _____

CHAPTER 8 REVIEW

Chemical Equations and Reactions

SECTION 8-1

SHORT ANSWER Answer the following questions in the space provided.

1. Match the symbol on the left with its appropriate description on the right.

_____ Δ	(a) A precipitate forms.
_____ $\downarrow$	(b) A gas forms.
_____ $\uparrow$	(c) A reversible reaction occurs.
_____ (l)	(d) Heat is applied to the reactants.
_____ (aq)	(e) A chemical is dissolved in water.
_____ $\rightleftarrows$	(f) A chemical is in the liquid state.

2. Finish balancing the following equation:

$3Fe_3O_4 +$ _____ $Al \rightarrow$ _____ $Al_2O_3 +$ _____ Fe

3. In each of the following formulas with coefficients, write the total number of atoms present.

_____ a. $4SO_2$

_____ b. $8O_2$

_____ c. $3Al_2(SO_4)_3$

_____ d. ~~HNO_3~~ $NaNO_3$

4. Convert the following word equation into a balanced chemical equation:
aluminum metal + copper(II) fluoride → aluminum fluoride + copper metal

_____

5. One way to test the salinity of a water supply is to add a few drops of silver nitrate of known concentration to the water. As the solutions of sodium chloride and silver nitrate mix, a precipitat of silver chloride forms, leaving sodium nitrate in solution. Translate these sentences into a balanced chemical equation.

_____

6. a. Balance the following equation: $NaHCO_3(s) \xrightarrow{\Delta} Na_2CO_3(s) + H_2O(g) + CO_2(g)$

_____

Name _____ Date _____ Class _____

SECTION 8-1 continued

b. Translate the chemical equation in part a into a sentence.

_____

_____

_____

_____

7. The poisonous gas hydrogen sulfide can be neutralized with a base such as NaOH. The unbalanced equation for this reaction follows:

$$NaOH(aq) + H_2S(g) \rightarrow Na_2S(aq) + H_2O(l)$$

A student who was asked to balance this equation wrote the following:

$$Na_2OH(aq) + H_2S(g) \rightarrow Na_2S(aq) + H_3O(l)$$

Is this equation balanced? Is it correct? Explain why or why not, and supply the correct balanced equation if necessary.

_____

_____

_____

_____

PROBLEM **Write the answer on the line to the left. Show all your work in the space provided.**

8. Recall that coefficients in a balanced equation give relative amounts of moles as well as numbers of molecules.

_____ **a.** Calculate the amount of CO_2 in moles that forms if 10 mol of C_3H_4 react according to the following balanced equation:

$$C_3H_4 + 4O_2 \rightarrow 3CO_2 + 2H_2O$$

_____ **b.** Calculate the amount of O_2 in moles that is consumed.