Physical Science Name: _____ Block: __
Chemical Equation Word Problems

Write a balanced equation for each of the following, and indicate what type of reaction it is. Remember the diatomic molecules: H_2, N_2, O_2, F_2, Cl_2, Br_2 and I_2!

1. Sulfur powder plus oxygen gas yields sulfur dioxide gas

2. Sulfur dioxide gas plus oxygen gas gives sulfur trioxide gas.

3. Sulfur trioxide gas plus water results in sulfuric acid (H_2SO_4 - acid rain)

4. Coal (solid carbon) burns

5. Natural gas (CH_4) burns

6. Aluminum metal plus iron (III) oxide, when heated, give off even more heat and result in liquid aluminum oxide and molten iron (the "thermite" reaction)

7. Zinc plus hydrochloric acid (hydrogen chloride in water) produces zinc(II) chloride and hydrogen gas

8. Aluminum oxide ("bauxite") yields aluminum metal and oxygen gas

9. Calcium powder plus oxygen gas results in calcium oxide

10. Chlorine gas and aluminum bromide yield liquid bromine and aluminum chloride

Level 1:

Write a balanced equation for each of the following, and indicate what type of reaction it is. They use the polyatomic ions listed:

Ammonium	NH_4^+		
Hydroxide	OH^-		
Cyanide	CN^-		
Carbonate	CO_3^{2-}		
Nitrate	NO_3^-	Nitrite	NO_2^-
Phosphate	PO_4^{3-}		
Sulfate	SO_4^{2-}	Sulfite	SO_3^{2-}
Chlorate	ClO_3^-		
Chromate	CrO_4^{2-}		

1. Zinc and copper(II) sulfate yield zinc(II) sulfate and copper metal

2. Calcium hydroxide and hydrochloric acid (see #7 above) yields calcium chloride and water

3. Hydrogen phosphate plus calcium hydroxide results in water and calcium phosphate

4. Heating calcium carbonate results in calcium oxide and carbon dioxide