Name: _____

Oxidation Numbers Worksheet

Directions: Use the *Rules for Assigning Oxidation Numbers* to determine the oxidation number assigned to each element in each of the given chemical formulas.

Rules for Assigning Oxidation Numbers	Example:
1. The oxidation number of any uncombined element is **0.**	Ne, O_2 ▷ **0**
2. The oxidation number of a monatomic ion equals the charge on the ion.	Fe^{+3} ▷ **+3**
3. The oxidation number of halogens in a compound is mostly **-1.**	F^{-1} ▷ **-1**
4. Oxygen has an oxidation number of **-2** unless it's a peroxide is **-1**	H_2O^{-2} ▷ **-2** $Na_2O_2^{+2}$ ▷ **-1**
5. The oxidation number of a metal is **+1** in Group 1 and **+2** in Group 2.	K^{+1} ▷ **+1**
6. Hydrogen works with **+1** with nonmetals and **-1** with metals.	$H^{+1}Cl^{-1}$ ▷ **+1** $Na^{+1}H^{-1}$ ▷ **-1**
7. The sum of the oxidation numbers of all atoms in a neutral compound is 0.	
8. The sum of the oxidation numbers of all atoms in a polyatomic ion = the charge of the ion.	

1. Give oxidation numbers for the underlined atoms in these molecules:

a. **Cs_2O** Cs: O:

b. **N_2O_3** N: O:

c. **Na_4SiO_4** Na: Si: O:

d. **$K_2Cr_2O_7$** K: Cr: O:

e. **H_2O_2** H: O: *(This is a peroxide)*

f. **$Al(OH)_3$** Al: O H:

g. **HPO_3** H: P: O:

h. **H_2SeO_3** H: Se: O:

i. **N_2** N:

j. **Kr** Kr:

k. **H_2O** H: O:

l. **FeO** Fe: O:

m. **CaS** Ca: S:

n. **H_2** H:

o. **He** He:

p. **H_2SO_4** S: H:

2. Give the oxidation numbers for the following ions

a. **Cu^{+1}** Cu:

b. **Co^{2+}** Co:

c. **Cl^{-1}** Cl:

d. **IO_2^{-1}** I: O:

e. **SbF_6^{-1}** Sb: F:

f. **OH^{-1}** O: H: