

Name: \_\_\_\_\_ Hour: \_\_\_\_\_ Date: \_\_\_\_\_

### Rules for Assigning Oxidation Numbers

1. The oxidation number of any uncombined element is 0.
2. The oxidation number of a monatomic ion equals the charge on the ion.
3. The more-electronegative element in a binary compound is assigned the number equal to the charge it would have if it were an ion.
4. The oxidation number of fluorine in a compound is always -1.
5. Oxygen has an oxidation number of -2 unless it is combined with F (when it is +2), or it is in a peroxide (such as  $\text{H}_2\text{O}_2$  or  $\text{Na}_2\text{O}_2$ ), when it is -1.
6. The oxidation state of hydrogen in most of its compounds is +1 unless it is combined with a metal, in which case it is -1.
7. In compounds, the elements of groups 1 and 2 as well as aluminum have oxidation numbers of +1, +2, and +3 respectively.
8. The sum of the oxidation numbers of all atoms in a neutral compound is 0.
9. The sum of the oxidation numbers of all atoms in a polyatomic ion equals the charge of the ion.

Substance	Oxidation Number (show your work)
NaCl	Na = Cl =
$\text{NH}_4^{+1}$	N = H =
$\text{Na}_2\text{Cr}_2\text{O}_7$	Na = Cr = O =
$\text{Ca}(\text{OH})_2$	Ca = O = H =
$\text{I}_2$	I =
$\text{CO}_2$	C = O =
$\text{HNO}_2$	H = N = O =
$\text{KClO}_3$	K = Cl = O =
$\text{Fe}^{+3}$	Fe =
$\text{Cd}^{+2}$	Cd =

FeCl <sub>3</sub>	Fe = Cl =
SrO	Sr = O =
AsO <sub>4</sub> <sup>-3</sup>	As = O =
H <sub>2</sub> SO <sub>3</sub>	H = S = O =
KClO <sub>3</sub>	K = Cl = O =
Ni (s)	Ni =
PO <sub>3</sub> <sup>-3</sup>	P = O =
CN <sup>-1</sup>	C = N =
MnO <sub>2</sub>	Mn = O =
AgNO <sub>3</sub>	Ag = N = O =
MgBr <sub>2</sub>	Mg = Br =
Ba(IO) <sub>2</sub>	Ba = I = O =