

	Hint	Oxidation Numbers for each Element			
a. SnCl_4	Rule 2	Sn <u>+4</u>	Cl <u>-1</u>		
b. Ca_3P_2	Rule 2	Ca <u>+2</u>	P <u>-3</u>		
c. SnO	Rules 4, 5	Sn <u>+2</u>	O <u>-2</u>		
d. Ag_2S	Rule 2	Ag <u>+1</u>	S <u>-2</u>		
e. HI	Rule 3, 5	H <u>+1</u>	I <u>-1</u>		
f. N_2H_4	Rule 3, 5	N <u>-2</u>	H <u>+1</u>		
g. Al_2O_3	Rule 4, 5	Al <u>+3</u>	O <u>-2</u>		
h. S_8	Rule 1	S <u>0</u>			
i. HNO_2		H <u>+1</u>	N <u>+3</u>	O <u>-2</u>	
j. O_2		O <u>0</u>			
k. H_3O^+	Rules 3, 4, 6	H <u>+1</u>	O <u>-2</u>		
l. ClO_5^-	Rules 4, 6	Cl <u>+5</u>	O <u>-2</u>		
m. $\text{S}_2\text{O}_3^{2-}$		S <u>+2</u>	O <u>-2</u>		
n. KMnO_4		K <u>+1</u>	Mn <u>7</u>	O <u>-2</u>	
o. $(\text{NH}_4)_2\text{SO}_4$		N <u>-3</u>	H <u>+1</u>	S <u>+6</u>	O <u>-2</u>

2. Determine the oxidation number of carbon in each of the following compounds:

a. methane, CH_4

$$\text{C} = -4$$

b. formaldehyde, CH_2O

$$\text{C} = 0$$

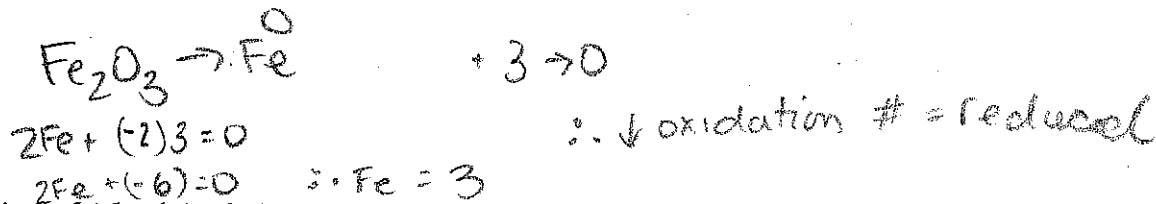
c. carbon monoxide, CO

$$\text{C} = +2$$

d. carbon dioxide, CO_2

$$\text{C} = +4$$

3. When elemental iron is made from Fe_2O_3 , is iron oxidized or reduced?



4. Determine which of the following processes are oxidations and which are reductions:

- a. Co^{2+} becomes Co gains e^- = reduced
oxidation #
- b. 2I^- becomes I_2
-1 0 loses e^- \therefore oxidized
- c. Fe^{3+} becomes Fe^{2+} \downarrow oxidation # \therefore gains e^- \therefore reduced
- d. Sn^{2+} becomes Sn^{4+} \uparrow oxidation # \therefore loses e^- \therefore oxidized

5. Determine if each of the following changes is an oxidation, a reduction, or neither:

