OXIDATION NUMBER REVIEW SHEET (not to be turned in)

1) For each of the following substances assign all of the oxidation numbers.

a) H_2SO_4	H ___+1____	S ___+6_____	O ___-2_____
b) PO_4^{3-}	P ___+5_____	O ___-2_____	
c) $CHCl_3$	C ___+2_____	H ___+1_____	Cl ___-1_____
d) PF_5	P ___+5_____	F ____-1_____	
e) SiH_4	Si ___+4_____	H ____-1____	
f) $KMnO_4$	K ___+1_____	Mn __+7_____	O ____-2____
g) $Ti(SO_4)_2$	Ti____+4____	S ____+6____	O ____-2____
h) P_4	P _____0____		
i) H_2O_2	H ____+1____	O ____-1____	
j) $NaHCO_3$	Na ___+1____	H ____+1____	
		C ____+4____	O ____-2____
k) AsO_2^-	As ___+3_____	O ____-2____	
l) XeF_6	Xe ___+6_____	F ____-1____	

2) For the following reaction, identify the oxidation and reduction taking place, the oxidizing agent, and the reducing agent.

$$\underset{+7\ -2}{2\ MnO_4^-(aq)} + 5\ \underset{+1\ +4\ -2}{H_2SO_3(aq)} \rightarrow \underset{+2}{2\ Mn^{2+}(aq)} + \underset{+1}{4\ H^+(aq)} + \underset{+6\ -2}{5\ SO_4^{2-}(aq)} + \underset{+1\ -2}{3\ H_2O(\ell)}$$

oxidation ____S, from +4 to +6_____

reduction ____Mn, from +7 to +2_____

oxidizing agent ____MnO_4^-_____ reducing agent ___H_2SO_3_____

The <u>oxidizing agent</u> is the species being reduced, and the <u>reducing agent</u> is the species being oxidized.