Worksheet 7 - Oxidation/Reduction Reactions

Oxidation number rules:

Elements have an oxidation number of **0**
Group I and **II** – In addition to the elemental oxidation state of 0, Group I has an oxidation state of **+1** and Group II has an oxidation state of **+2**.
Hydrogen –usually **+1**, except when bonded to Group I or Group II, when it forms hydrides, **-1**.
Oxygen – usually **-2**, except when it forms a O-O single bond, a peroxide, when it is **-1**.
Fluorine is always **-1**. Other halogens are usually -1, except when bonded to O.

1. Assign **oxidation numbers** to each of the atoms in the following compounds:

Na_2CrO_4	Na =	O =	Cr =
$K_2Cr_2O_7$	K =	O =	Cr =
CO_2	O =	C =	
CH_4	H =	C =	
$HClO_4$	O =	H =	Cl =
MnO_2	O =	Mn =	
SO_3^{2-}	O =	S =	
SF_4	F =	S =	

a. What is the range of oxidation states for **carbon**?

b. Which compound has C in a +4 state?

c. Which compound has C in a -4 state?