



- Give the oxidation number of the following ions:
 a. H^+ b. Cl^- c. Ag^+ d. S^{2-} e. Mg^{2+} f. Mn^{4+} g. Sr^{2+} h. Al^{3+} i. K^+ j. F^-
- By referring to your periodic table, predict the oxidation number of these elements when they form ions:
 a. I b. Sn c. C d. Li e. B f. O g. Ba h. Rb i. Si j. Br k. Be
- Examine each of the following reactions and decide which are 'redox' reactions. Explain your choice:
 - $\text{Cu}_{(s)} + \text{Cl}_{2(g)} \rightarrow \text{CuCl}_{2(s)}$
 - $\text{NaOH}_{(aq)} + \text{HNO}_{3(aq)} \rightarrow \text{NaNO}_{3(aq)} + \text{H}_2\text{O}_{(l)}$
 - $\text{MnO}_{2(s)} + 4\text{HCl}_{(aq)} \rightarrow \text{MnCl}_{2(aq)} + 2\text{H}_2\text{O}_{(l)} + \text{Cl}_{2(aq)}$
 - $\text{CuO}_{(s)} + \text{H}_2\text{SO}_{4(l)} \rightarrow \text{CuSO}_{4(aq)} + \text{H}_2\text{O}_{(l)}$
 - $2\text{C}_2\text{H}_{2(g)} + 5\text{O}_{2(g)} \rightarrow 4\text{CO}_{2(g)} + 2\text{H}_2\text{O}_{(g)}$
- Work out the oxidation number of the first element in each of the following compounds:
 a. PbO_2 b. ZnO c. SF_6 d. Fe_2O_3 e. MnO f. $\text{Cr}(\text{NO}_3)_3$ g. NiCO_3
 h. PCl_3 i. Cu_2SO_4 j. V_2O_5 k. N_2O l. FeS m. SiCl_4 n. Hg_2S
- There are 3 metals in the above problems that showed *variable valency* (or more than one oxidation number other than zero). Find them and give their oxidation states. Where are they positioned in the periodic table?
- Complete these sentences:
 Oxidation is _____ of electrons, while _____ is gain (OILRIG). When carbon is burnt in oxygen, the carbon is _____ and the oxygen is _____.
 Carbon's O.N. (oxidation number) changes from _____ to _____, while oxygen's changes from _____ to _____. Because oxygen is doing the oxidizing, we call it the _____ agent. Carbon is therefore the _____ agent.