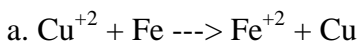


## Solutions to Exercises for Objective B

1. In each of the following, identify what is being **oxidized** and what is being **reduced**.

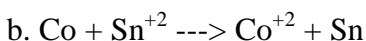
These solutions include unbalanced half reactions. Although the charges balance out, the number of atoms is not always balanced. At this stage in the game, we are just trying to show how oxidation numbers change: either through the gain or loss of electrons. Next class we'll learn how to write **balanced** half-reactions.



REDUCTION of  $\text{Cu}^{+2}$



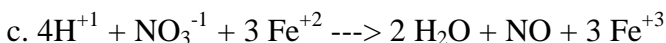
OXIDATION of Fe



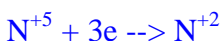
REDUCTION of  $\text{Sn}^{+2}$



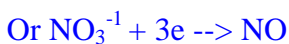
OXIDATION of Co



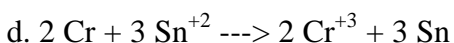
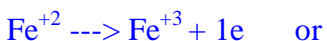
REDUCTION of  $\text{N}^{+5}$  or  $\text{NO}_3^{-1}$



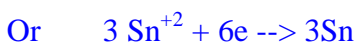
(Where does  $+5$  come from? Look at  $\text{NO}_3^{-1}$ :  $\text{N} + 3(-2) = -1$ , so  $\text{N} = +5$ )



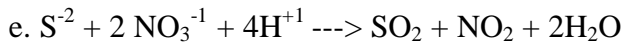
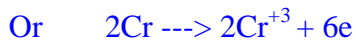
OXIDATION of  $\text{Fe}^{+2}$



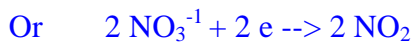
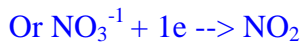
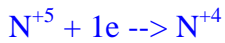
REDUCTION of  $\text{Sn}^{+2}$



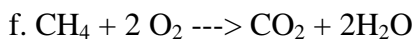
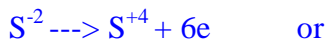
OXIDATION of Cr



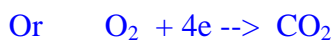
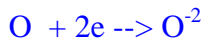
REDUCTION of  $\text{N}^{+5}$  or  $\text{NO}_3^{-1}$



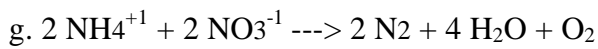
OXIDATION of  $\text{S}^{-2}$



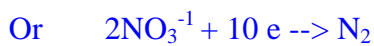
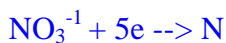
REDUCTION of O or  $\text{O}_2$



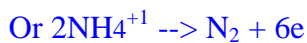
OXIDATION of  $\text{C}^{-4}$  or  $\text{CH}_4$

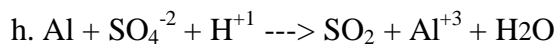


REDUCTION of  $\text{NO}_3^{-1}$



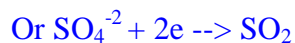
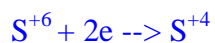
OXIDATION of  $\text{NH}_4^{+1}$



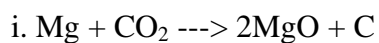


( not balanced, but don't worry )

REDUCTION of S or  $\text{SO}_4^{-2}$



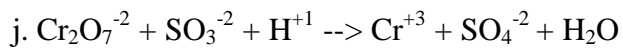
OXIDATION of Al



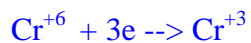
REDUCTION of  $\text{C}^{+4}$  or  $\text{CO}_2$



OXIDATION of Mg



REDUCTION of  $\text{Cr}^{+6}$  or  $\text{Cr}_2\text{O}_7^{-2}$



OXIDATION of S or  $\text{SO}_3^{-2}$

