

Chapter 10

TRANSPARENCY 23

OXIDATION NUMBERS OF GROUPS

1. Complete the table below for the indicated elements.

Group and element	Outer configuration	Number of outer electrons	Electrons typically lost or gained	Oxidation number
Group 1 Li Rb				
Group 2 Mg Ba				
Group 13 Al Ga				
Group 14 C Pb				
Group 17 Cl I				
Group 18 Ne Kr				

2. In general, what relationship exists between the number of outer electrons and the oxidation numbers of the elements within each of the following:

- a. Groups 1, 2, and 13 _____
- b. Groups 15, 16, and 17 _____

3. How could you predict oxidation numbers by looking at electron configurations?

4. From what sublevel do alkali and alkaline earth elements tend to lose electrons? _____

5. Relate the idea of filled outer energy levels to oxidation numbers in general.

6. From what sublevels do transition metals tend to lose electrons? Why do these metals tend to have more than one oxidation number?

7. Predict the oxidation numbers of the following:

- a. K _____ d. Sr _____
- b. Ca _____ e. P _____