

## Elements and Bonding

Name - \_\_\_\_\_

1.) Classify each of the following elements as an alkali metal, an alkaline-earth metal, transition metal, metalloid, halogen, or noble gas based on its position in the periodic table:

a.) boron \_\_\_\_\_

b.) gold \_\_\_\_\_

c.) krypton \_\_\_\_\_

d.) calcium \_\_\_\_\_

2.) How many valence electrons does each of the following elements have?

a.) carbon \_\_\_\_\_

b.) xenon \_\_\_\_\_

c.) selenium \_\_\_\_\_

d.) potassium \_\_\_\_\_

3.) Which of the following ions are likely to be formed?

a.)  $N^{+5}$  \_\_\_\_\_

d.)  $Al^{+2}$  \_\_\_\_\_

b.)  $He^{+1}$  \_\_\_\_\_

e.)  $P^{-3}$  \_\_\_\_\_

c.)  $F^{-1}$  \_\_\_\_\_

f.)  $Mg^{+2}$  \_\_\_\_\_

4.) Explain why oxygen is a fairly reactive element while neon is not.

5.) Explain why beryllium loses electrons when forming ionic bonds, while sulphur gains electrons.

6.) Explain why fluorine and chlorine have similar reactivities (the word "valence" should be somewhere in your answer!)