Chemistry

Name

Period _____

Ions and Ionic Compounds Worksheet

1. For each of the following, tell whether the bonding contains ionic, covalent or both:
   a. CO_2 covalent c. Na_2O IONIC e. $Ca_3(PO_4)_2$ both
   b. SO_3 covalent d. NH_4NO_3 both f. P_4O_6 covalent

2. Write electron dot structures for each of the following elements:
   a. Se b. Ca c. O d. P e. Li f. F

3. Complete the following table:

Atom	Gain/lose e^-	# of e^- gained/lost	Charge on ion	Ion Formula	e^- dot structure of ion
Se	gains	2	-2	Se^{2-}	$:\ddot{S}e:^{2-}$
Ca	loses	2	+2	Ca^{2+}	Ca^{2+}
O	gains	2	-2	O^{2-}	$:\ddot{O}:^{2-}$
P	gains	3	-3	P^{3-}	$:\ddot{P}:^{3-}$
Li	loses	1	+1	Li^+	Li^+
F	gains	1	-1	F^-	$:\ddot{F}:^-$

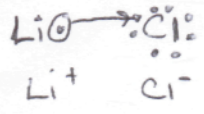
4. Write an equation for the ionization of each of the elements in problem #3.

   Example: $Mg \longrightarrow Mg^{2+} + 2\ e^-$

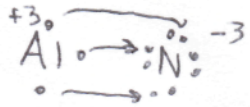
   a. $Se + 2e^- \rightarrow Se^{2-}$
   b. $Ca \rightarrow Ca^{+2} + 2e^-$
   c. $O + 2e^- \rightarrow O^{2-}$
   d. $P + 3e^- \rightarrow P^{3-}$
   e. $Li \rightarrow Li + 1e^-$
   f. $F + 1e^- \rightarrow F^-$

5. Diagram the formation of the ionic compounds below using dot structures. Include the charge of the ion.

a. LiCl

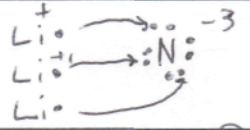


b. AlN

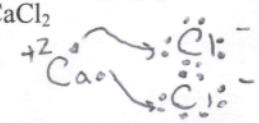


c. CaS

d. Li_3N

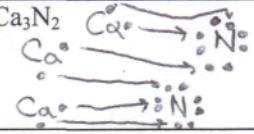


e. $CaCl_2$



f. Al_2S_3

g. Ca_3N_2



h. $AlCl_3$