

## Lewis Dot Diagrams

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


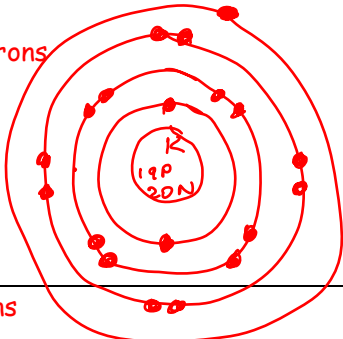
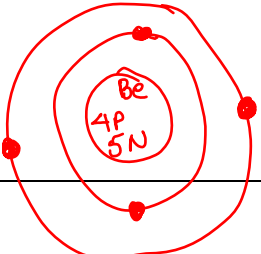
1.) What type of bonding are Lewis diagrams useful for representing?

Covalent bonding

2.) State the number of valence electrons for each of the following elements:

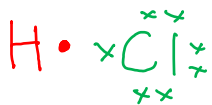
a.) Carbon 4b.) Argon 0c.) Lithium 1d.) Magnesium 2e.) Hydrogen 1f.) Helium 0g.) Sulphur 6

3.) Complete the following table by drawing what is asked for.

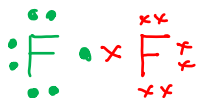
Element	Bohr diagram for atoms	Lewis diagram for atoms	Lewis diagram for ions
Hydrogen	<p>1 proton</p> <p>0 neutrons</p> 	$H_x$	$[H]^{+1}$ or $[H:]^{-1}$
Potassium	<p>19 protons</p> <p>20 neutrons</p> 	$K_x$	$[K]^{+1}$
Beryllium	<p>4 protons</p> <p>5 neutrons</p> 	$\times Be$	$[Be]^{+2}$

4.) Draw Lewis diagrams for each of the following molecules. Be sure to use "x" to represent electrons for the second element.

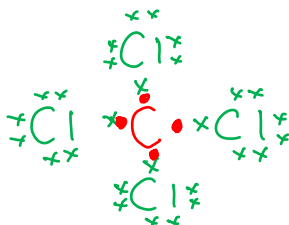
a.) HCl



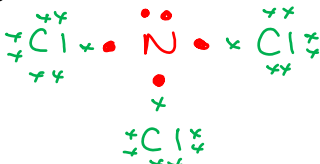
b.) F<sub>2</sub>



c.) CCl<sub>4</sub>



d.) NCl<sub>3</sub>



5.) Correct the following Lewis structures that have mistakes.

a.)  $\cdot\ddot{S}\cdot$       only 4 valence electrons not 5

b.)  $\cdot\ddot{H}e$       only 2 valence electrons not 3

c.)  $\begin{array}{c} H \\ \times C \times \\ \times O \times \\ H \end{array} H$       The bottom and top hydrogen need to put in an electron each. Carbon needs to put an electron for the top and bottom hydrogen as well.

d.)  $\begin{array}{c} N \\ \times F \\ \times F \end{array} \times F$  ( be careful - 2 mistakes!)      Nitrogen has 5 valence electrons not 3 and the bottom fluorine needs one of the electrons drawn as an x so we know the electron came from the nitrogen not just the fluorine.