

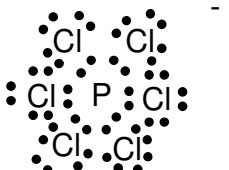
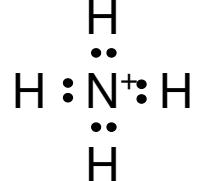
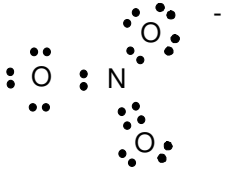
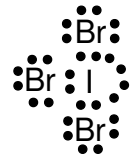
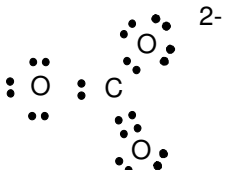
Revised August 2009

HONORS WORKSHEET 9s: ANSWERS

1. A strong electrostatic attraction between a positively charged cation and a negatively charged anion.
- 2.

Mg^{2+}	NO_3^-
Al^{3+}	SO_3^{2-}
Al^{3+}	N^{3-}
Na^+	P^{3-}
NH_4^+	NO_2^-

3. A shared pair of electrons between two atoms
4. Non-metals
- 5.

Molecule or ion	AROUND CENTRAL ATOM					Lewis dot structure	Different molecule or ion with same atom geometry
	# of Bonding pairs (Count multiple bonds as one pair)	# of Lone pairs	Atom geometry	Electron pair geometry	Hybridization		
PCl_6^-	6	0	Octahedral	Octahedral	sp^3d^2		SF_6
NH_4^+	4	0	tetrahedral	tetrahedral	sp^3		CH_4
NO_3^-	3	0	Trigonal planar	Trigonal planar	sp^2		BF_3
IBr_3	3	2	T-Shaped	Trigonal Bipyramid	sp^3d		ICl_3
CO_3^{2-}	3	0	Trigonal Planar	Trigonal Planar	sp^2		BCl_3

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6.

Yes	No
Yes	No
Yes	Yes
No	No

7. An area of positive and negative charge within a single bond or a molecule
8. An unexpectedly large electrostatic intermolecular interaction between molecules caused when H atoms are directly connected to small, electronegative atoms such as N, O or F
9. Boiling Point
10. When a homonuclear diatomic molecule approaches another, causing a shift of electrons to create a dipole in an otherwise non-polar molecule
11. Macro atomic structure held together by all strong covalent bonds
12. In the solid, iodine molecules are attracted to one another by weak London dispersion forces
13. When their ions are free to move, either when they are in solution or when they are molten
14. The free moving sea of electrons present in their structures
15. It has a low boiling point with weak inter-molecular forces that allows lots of molecules to escape into the vapor phase
16. General increase with increasing molecular mass from H_2S to H_2Te caused by increasing London dispersion forces. Water is the odd one out with a huge boiling point caused by Hydrogen bonding