

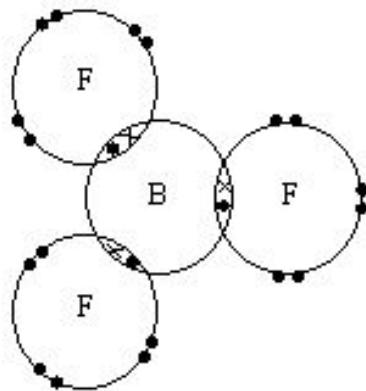
1) What is the bond angle of BeCl_2 and its name?



1) The bond angle is 180° and the name is Linear.

This is because there is 2 area of electrons density which wants to repel as far as possible.

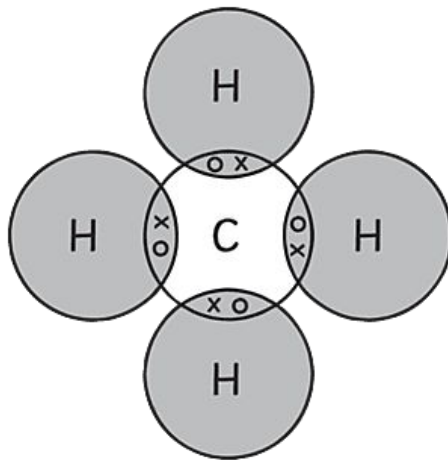
2) What is the bond angle of BF_3 and its name?



2) The bond angle is 120° and the name is Triangular Planar

This is because there is 3 areas of electrons density which wants to repel as far as possible.

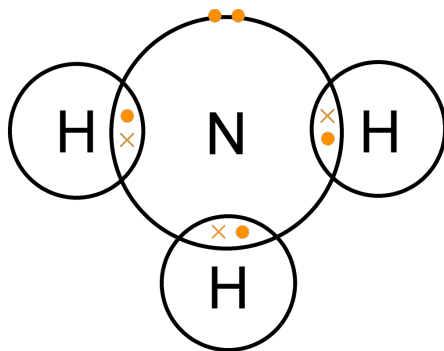
3) What is the bond angle of CH_4 and its name?



3) The bond angle is 109.5° and the name is Tetrahedral.

This is because there is 4 areas of electron density which wants to repel as far as possible.

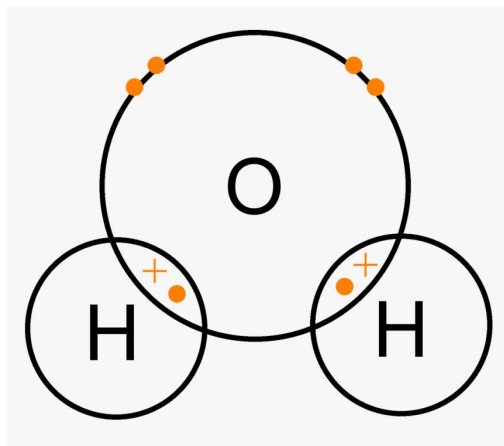
4) What is the bond angle of NH_3 and its name?



4) The bond angle is 107° and the name is Pyramidal

This is because there is 3 areas of electrons density as well as 1 lone pair which repel as far as possible.

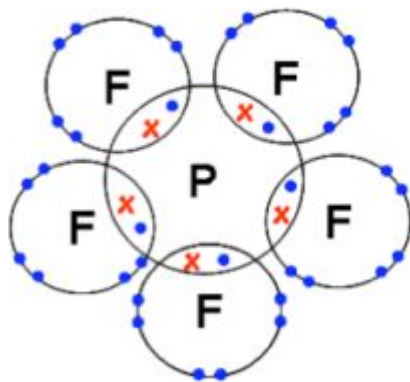
5) What is the bond angle of H_2O and its name?



5) The bond angle is 104.5° and the name is Bent or nonlinear.

This is because there is 2 areas of electrons density with 2 lone pairs trying to repel as far as possible.

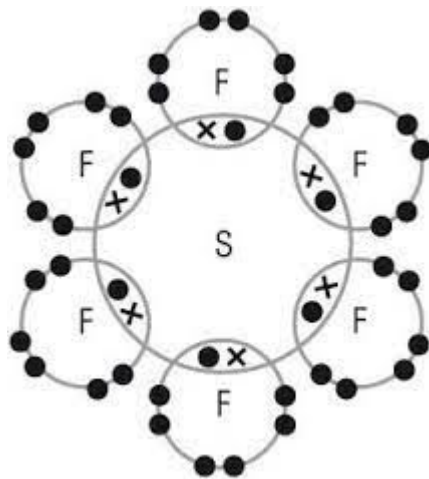
6) What is the bond angle of PF_5 and its name?



6) The bond angle is 90° and 120° and the name is Trigonal bipyramid.

This is because there is 5 areas of electrons density which wants to repel as far as possible.

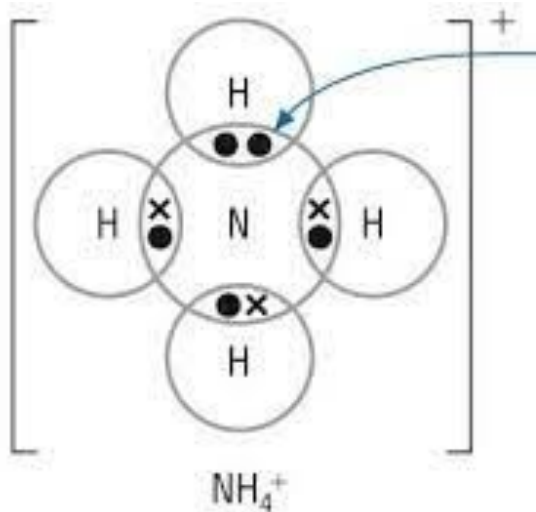
7) What is the bond angle of SF₆ and it's name?



7) The bond angle is 90° and the name is Octahedral

This is because there is 6 areas of electrons density which wants to repel as far as possible.

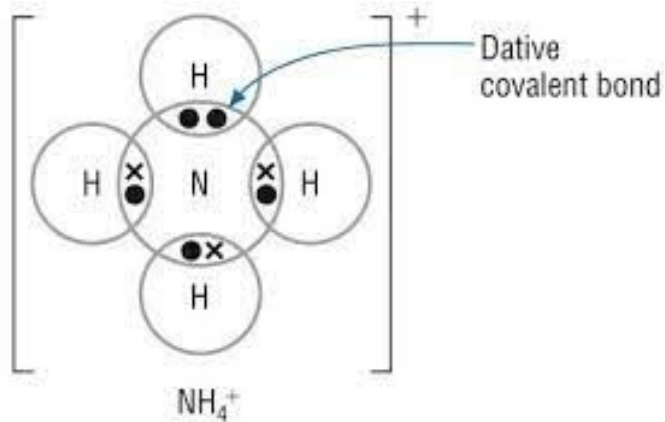
8) What is the bond angle of NH_4^+ and its name?



8) The bond angle is 109.5° and the name is Tetrahedral

This is because there is 4 areas of electrons density which wants to repel as far as possible.

9) What is a dative covalent bond?



9) The nitrogen has a lone pair of electrons. This means that a hydrogen ion which does not contain any electrons in its outer shell can share its electrons with the nitrogen. One of the hydrogen has two electrons from the nitrogen which has been shared making it a positively charged ion. This type of bond is called dative covalent bond and can be shown with an arrow \rightarrow when doing it without the dot-and-cross. This means that the electrons are shared from the same bonding pair of the atom.