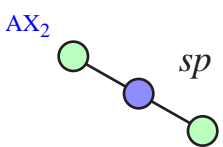
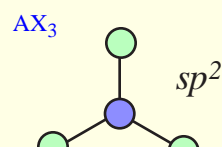
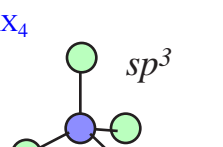
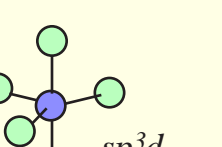
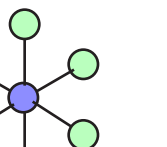


There are only **FIVE** possible electronic geometries which you establish by counting the number of electron regions surrounding the central atom

2 electron regions	3 electron regions	4 electron regions	5 electron regions	6 electron regions
AX_2 	AX_3 	AX_4 	AX_5 	AX_6 
linear	trigonal planar	tetrahedral	trigonal bipyramid	octahedral

1 position occupied by a lone pair

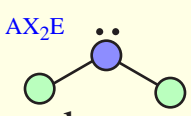
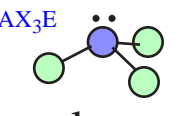
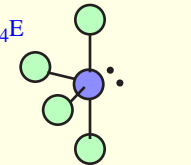
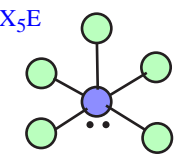
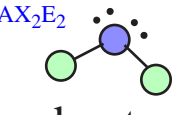
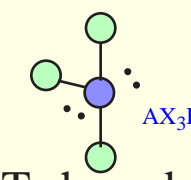
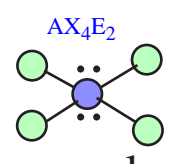
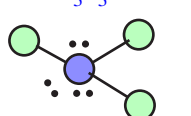
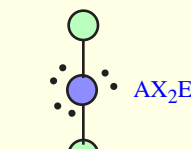
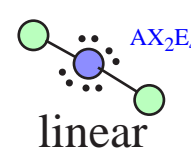
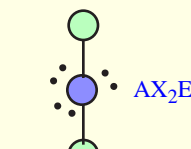
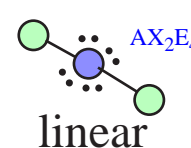
Molecular Geometries can be any of the shapes on the whole page. The electronic geometries are only those in the box (and orbital hybridizations). The molecular geometry will be different from the electronic when there is at least one or more lone pairs on the central atom. Look at the top of the table and go **DOWN** a column. As you change from bonding electrons to lone pair electrons, the molecular shape is now different from the electronic because some of the positions are missing atoms. The new shape is then renamed based on the shape of the atoms.

2 positions occupied by a lone pair

3 positions occupied by a lone pair

4 positions occupied by a lone pair

note that the lone pairs all go in the equatorial positions

AX_2E 	AX_3E 	AX_4E 	AX_5E 
bent	trigonal pyramid	see-saw	square pyramid
AX_2E_2 	AX_3E_2 	AX_4E_2 	AX_3E_3 
bent	T-shaped	square planar	T-shaped
AX_2E_3 	AX_2E_4 	AX_2E_3 	AX_2E_4 
linear	linear	linear	linear

Remember, once you have established the correct electronic geometry, the molecular geometry **MUST** be either the same as the electronic or one of the shapes listed directly under the electronic geometry. In other words, each shape in a given column here has the same electronic geometry given at the top of the column.

Polarity

If all the positions on the electronic geometry are the same (have the same atoms surrounding the central atom), the molecule is **NOT** polar because of the symmetry. Any of the other molecular geometries (except square planar and linear) under the box will be polar.