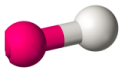
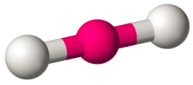
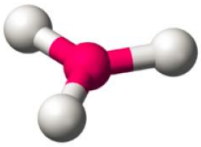
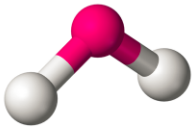
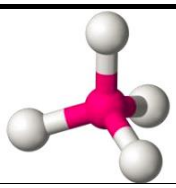
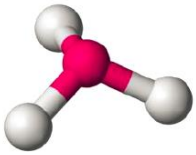
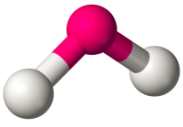
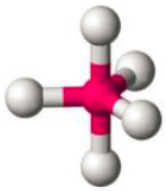
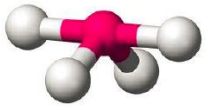
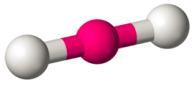
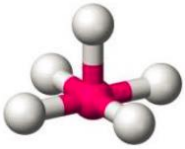
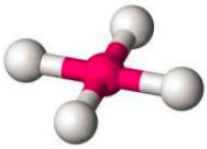
VSEPR

Valence Shell Electron Pair Repulsion

Steric #	X	E	"generic" Looking at shape of everything attached	"specific" Only looking at shape of atoms		
Electron Pairs	**Bonded Pairs**	**Lone Pairs**	**Electron Geometry** (hybridization)	**Molecular Geometry** (AXE Formula)	**Bond Angles**	**3-D example**
2	1	1-3	Linear (sp)	Linear (AXE, AXE_2, AXE_3)	180	
	2	0		Linear (AX_2)		
3	3	0	Trigonal Planar (sp^2)	Trigonal Planar (AX_3)	120	
	2	1		Bent (AX_2E)	< 120	
4	4	0	Tetrahedral (sp^3)	Tetrahedral (AX_4)	109.5	
	3	1		Trigonal Pyramidal (AX_3E)	< 109.5	
	2	2		Bent (AX_2E_2)	<< 109.5	

Continued on the back!

Steric #	X	E	"generic" Looking at shape of everything attached	"specific" Only looking at shape of atoms	*it is unclear if d orbitals hybridize – currently we think they do not.	
Electron Pairs	**Bonded Pairs**	**Lone Pairs**	**Electron Geometry** (hybridization)	**Molecular Geometry** (AXE Formula)	**Bond Angles**	**3-D example**
5	5	0	Trigonal Bipyramidal (sp^3d^*)	Trigonal Bipyramidal (AX_5)	90 Axial (above & below) 120 Equatorial (in plane)	
	4	1		Seesaw (AX_4E)	90 120 180	
	3	2		T-Shaped (AX_3E_2)	90 180	
	2	3		Linear (AX_2E_3)	180	
6	6	0	Octahedral (sp^3d^2*)	Octahedral (AX_6)	90	
	5	1		Square Pyramidal (AX_5E)	90 180	
	4	2		Square Planar (AX_4E_2)	90 180	
	3	3		T-Shaped (AX_3E_3)	90 180	
	2	4		Linear (AX_2E_4)	180