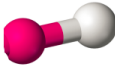
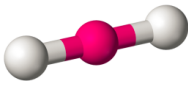
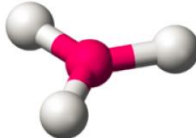
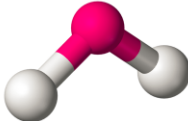
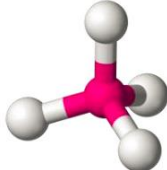
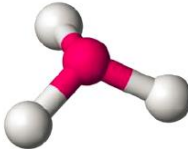
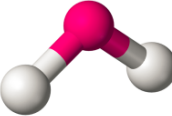
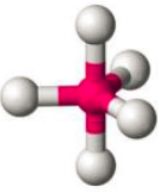
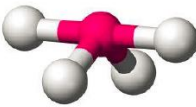
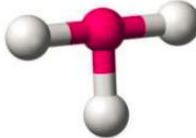
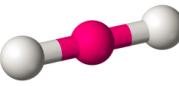

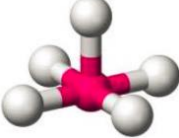
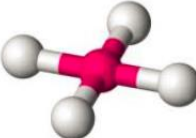
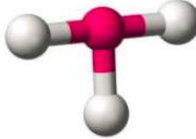


VSEPR

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 ₂ E)	< 120	
4	4	0	Tetrahedral (sp ³)	Tetrahedral (AX ₄)	109.5	
	3	1		Trigonal Pyramidal (AX ₃ E)	< 109.5	
	2	2		Bent (AX ₂ E 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	