Molecular Geometry Summary Sheet

Shaded squares represent geometries which give non-polar molecules when all substituents X are identical.

Total # of Bond Types & L.P. of E	***Orbital Geometry*** *(Hybridization)*	***Approximate Bond Angle***	***# of Bonding Directions (# of X)***	***# of Lone Pairs (# of E)***	***Molecular Geometry*** *(VSEPR class)*	***Shape***	***Examples***
2	*linear (sp)*	*180º*	2	0	**linear** (AX_2)		BeH_2, CO_2
3	*trigonal planar (sp^2)*	*120º*	3	0	**trigonal planar** (AX_3)		BF_3, NO_3^-
			2	1	**bent** (AX_2E)		SO_2
4	*tetrahedral (sp^3)*	*109.5º*	4	0	**tetrahedral** (AX_4)		CH_4
			3	1	**trigonal pyramidal** (AX_3E)		NH_3
			2	2	**bent** (AX_2E_2)		H_2O
5	*trigonal bipyramidal (sp^3d)*	*120º (in plane) & 90º (above & below)*	5	0	**trigonal bipyramidal** (AX_5)		PCl_5
			4	1	**seesaw** (AX_4E)		SF_4
			3	2	**T-shaped** (AX_3E_2)		ClF_3
			2	3	**linear** (AX_2E_3)		XeF_2
6	*octahedral (sp^3d^2)*	*90º*	6	0	**octahedral** (AX_6)		SF_6
			5	1	**square pyramidal** (AX_5E)		BrF_5
			4	2	**square planar** (AX_4E_2)		XeF_4
			3	3	**T-shaped** (AX_3E_3)		
			2	4	**linear** (AX_2E_4)