
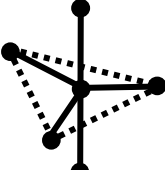
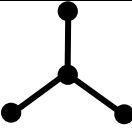
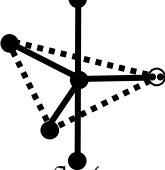
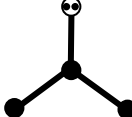
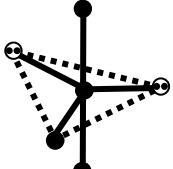
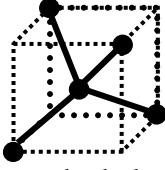
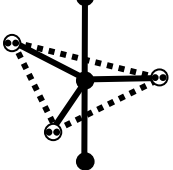
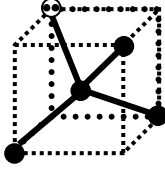
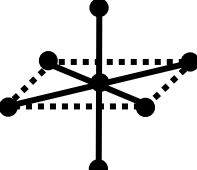
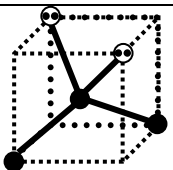
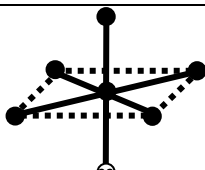
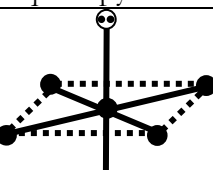


VSEPR Theory handout AX_mE_n A = central atom; X = bonded atom; E = nonbonding or lone e^- pair*

Bonded atoms	Lone pairs*	Shape	Examples	Bonded atoms	Lone pairs*	Shape	Examples
2	0	 linear	BeH_2, CO_2	5	0	 trigonal bipyramidal	PF_5, PCl_5, AsF_5
3	0	 trigonal planar	SO_3, BF_3	4	1	 butterfly (seesaw)	SF_4
2	1	 bent	SO_2, O_3	3	2	 T-shaped	ClF_3
4	0	 tetrahedral	CH_4, CF_4, SO_4^{2-}	2	3	 linear	XeF_2, I_3^-, IF_2^-
3	1	 trigonal pyramidal	$NH_3, PF_3, AsCl_3$	6	0	 octahedral	SF_6, PF_6^-, SiF_6^{2-}
2	2	 bent	H_2O, H_2S, SF_2	5	1	 square pyramidal	IF_5, BrF_5
---	---	---	---	4	2	 square planar	XeF_4, IF_4^-

*can be a single e^- in a free radical (odd e^- species)