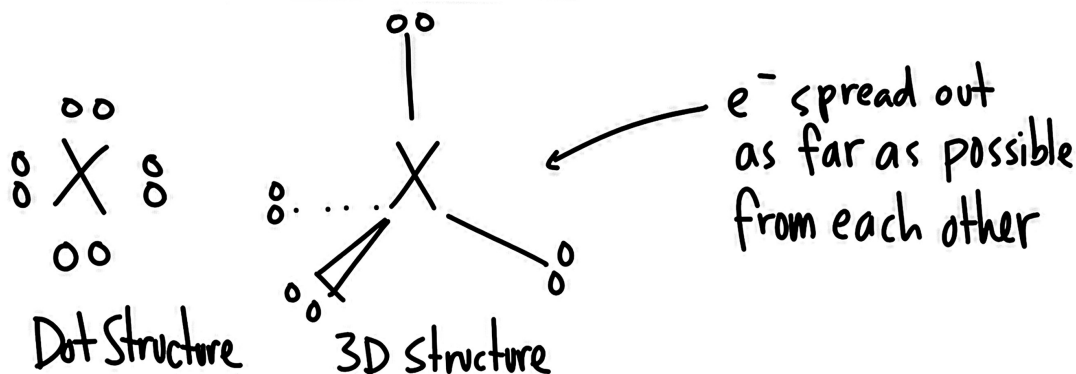


Valence Shell e⁻ pair repulsion (VSEPR)

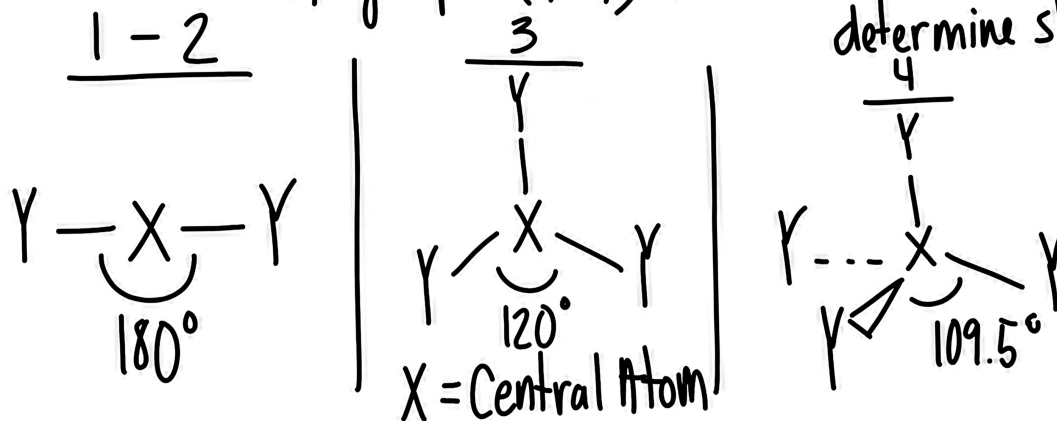
Feb-20-2024 8:25 PM 1/11



Valence Shell e⁻ pair repulsion (VSEPR)

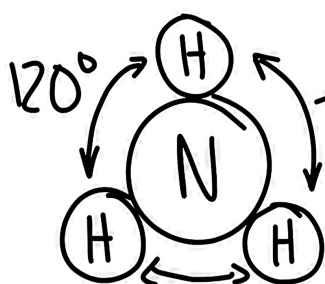
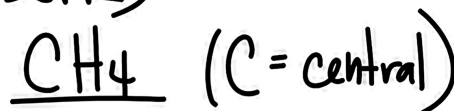
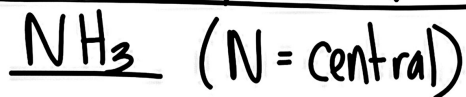
Feb-20-2024 8:25 PM 2/11

The number of groups (1-4) around central atom determine shape

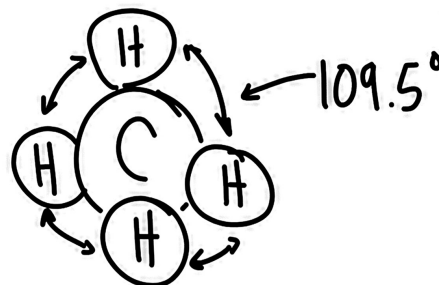


Valence Shell e⁻ pair repulsion (VSEPR)

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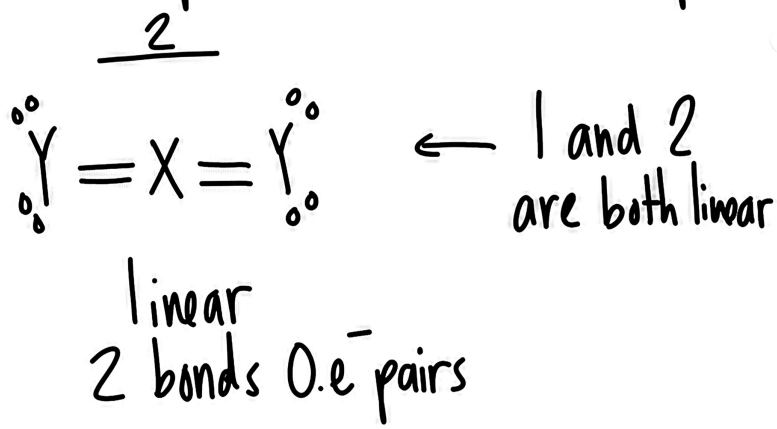
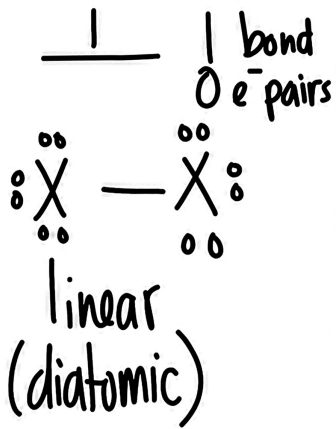
Repulsion



Valence Shell e⁻ pair repulsion (VSEPR)

Feb-20-2024 8:26 PM 4/11

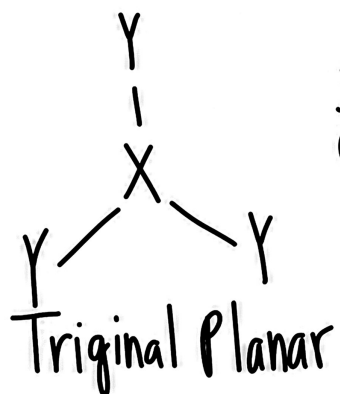
The number of atoms and e⁻ pairs determine shape



Valence Shell e⁻ pair repulsion (VSEPR)

Feb-20-2024 8:26 PM 5/11

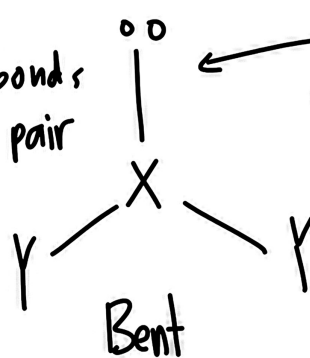
The number of atoms and e⁻ pairs determine shape



3 bonds
0 e⁻ pairs

3

2 bonds
1 e⁻ pair

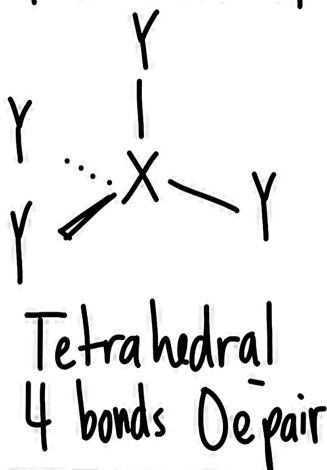


e⁻ pairs
are invisible
(can't see)

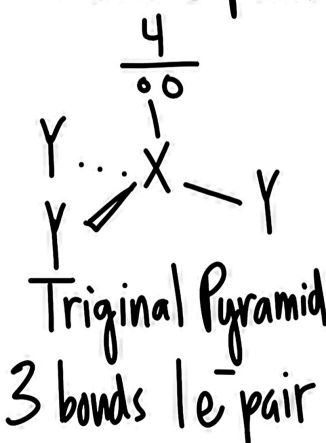
Valence Shell e⁻ pair repulsion (VSEPR)

Feb-20-2024 8:27 PM 6/11

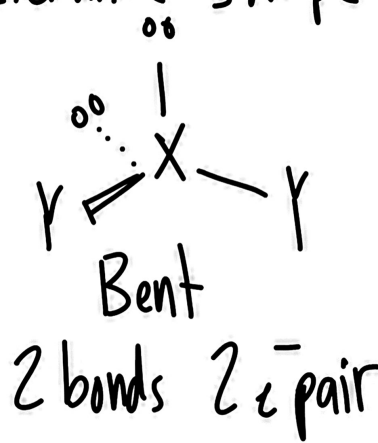
The number of atoms and e⁻ pairs determine shape



4 bonds 0 e⁻ pair



3 bonds 1 e⁻ pair

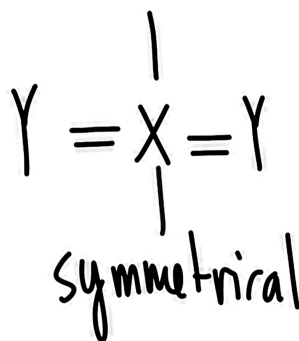
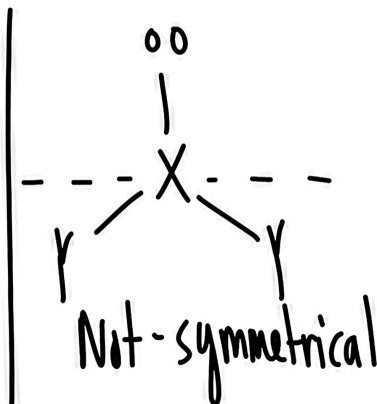
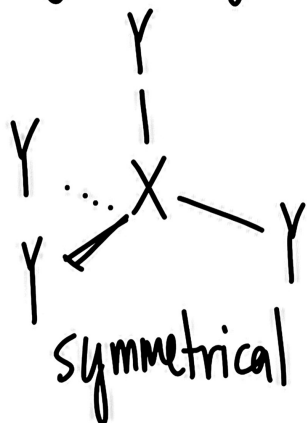


2 bonds 2 e⁻ pair

Valence Shell e⁻ pair repulsion (VSEPR)

Feb-20-2024 8:27 PM 7/11

Symmetry - Same atoms/e⁻ pairs on both sides



Valence Shell e⁻ pair repulsion (VSEPR)

Feb-20-2024 8:27 PM 8/11

Examples

Dot Structure



SiO₂

VSEPR



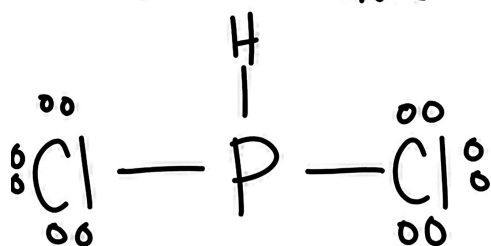
bonds 2 e⁻ pairs 0

Valence Shell e⁻ pair repulsion (VSEPR)

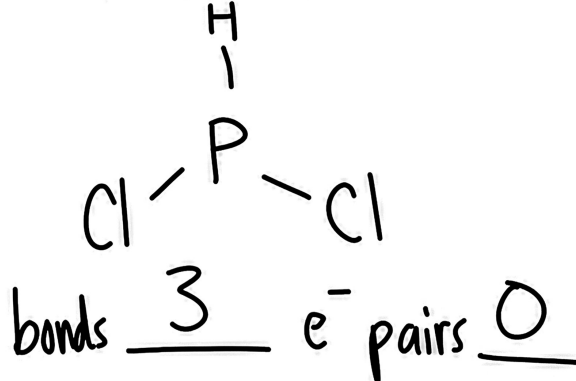
Feb-20-2024 8:27 PM 9/11

Examples

Dot Structure



VSEPR

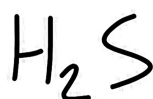
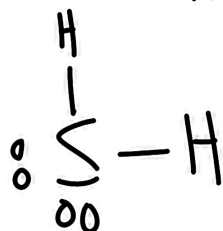


Valence Shell e⁻ pair repulsion (VSEPR)

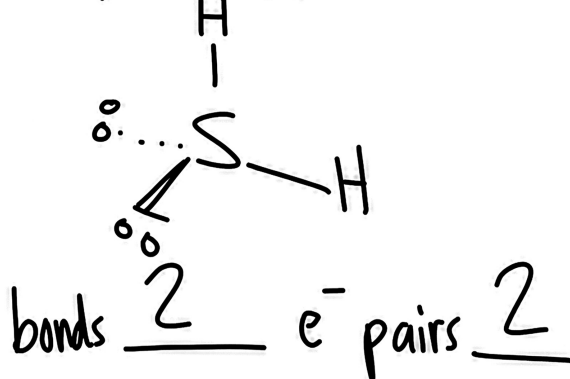
Feb-20-2024 8:27 PM 10/11

Examples

Dot Structure



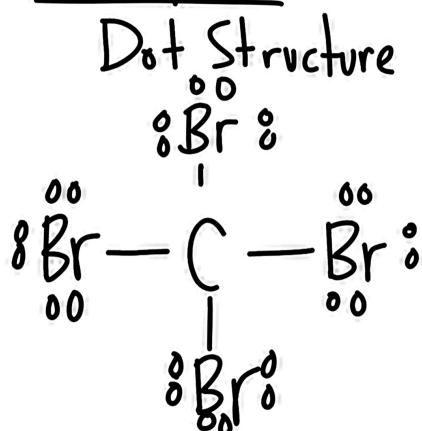
VSEPR



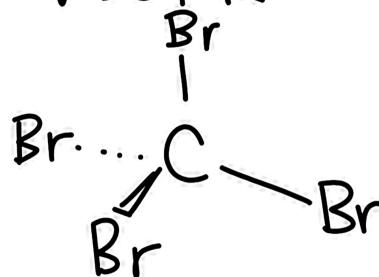
Valence Shell e⁻ pair repulsion (VSEPR)

Feb-20-2024 8:27 PM 11/11

Examples



VSEPR



bonds 4 e⁻ pairs 0

