






MOLECULAR SHAPES SUMMARY

Shape	Model	# atoms attached to central	# lone pairs on central atom	Bond Angle	Example
linear		2	0	180°	CO ₂ :O=C=O:
trigonal planar		3	0	120°	BF ₃ :F-B-F: :F:
tetrahedral		4	0	109.5°	CH ₄ H H-C-H H
trigonal pyramidal		3	1	107°	NH ₃ H H-N-H H
bent		2	2	104.5°	H ₂ O H-O-H

Name: _____

Covalent Molecules Practice (HC)

Draw the dot diagram for each of the following molecules and identify the bond type, molecular type and molecular polarity for each molecule.

Bond Type = Eneg.
Molecule Polarity = charge distribution

<p>HI</p> <p>H 2.2 I 2.7</p> <p>δ^+ H : I : δ^-</p> <p>polar covalent</p> <p>Shape: <u>linear</u></p> <p>Molecular Polarity: <u>polar</u></p> <p><i>positive pole</i> <i>negative pole</i></p>	<p>H₂</p> <p>H : H</p> <p>nonpolar</p> <p>Shape: <u>linear</u></p> <p>Molecular Polarity: <u>nonpolar</u></p>	<p>BeF₂</p> <p>Be = 1.6 F = 4.0</p> <p>δ^- : F : Be : F : δ^-</p> <p>polar</p> <p>Shape: <u>linear</u></p> <p>Molecular Polarity: <u>nonpolar</u></p> <p><i>no poles</i></p>
<p>H₂S</p> <p>H 2.2 S 2.6</p> <p>δ^+ H : S : δ^-</p> <p>polar</p> <p>Shape: <u>bent</u></p> <p>Molecular Polarity: <u>polar</u></p> <p><i>positive pole</i> <i>negative pole</i></p>	<p>NF₃</p> <p>N 3.0 F 4.0</p> <p>δ^+ : F : N : F : δ^-</p> <p>polar</p> <p>Shape: <u>pyramidal</u></p> <p>Molecular Polarity: <u>polar</u></p> <p><i>neg. pole</i> <i>pos. pole</i></p>	<p>BCl₃</p> <p>δ^- : Cl : B : Cl : δ^-</p> <p>polar</p> <p>Shape: <u>planar</u></p> <p>Molecular Polarity: <u>nonpolar</u></p> <p><i>no poles</i></p>
<p>CCl₄</p> <p>C 2.6 Cl 3.2</p> <p>δ^- : Cl : C : Cl : δ^-</p> <p>polar</p> <p>Shape: <u>tetrahedral</u></p> <p>Molecular Polarity: <u>nonpolar</u></p> <p><i>no poles</i></p>	<p>CHCl₃</p> <p>H 2.2 C 2.6 Cl 3.2</p> <p>δ^- : Cl : C : Cl : δ^-</p> <p>polar</p> <p>Shape: <u>tetrahedral</u></p> <p>Molecular Polarity: <u>polar</u></p> <p><i>positive pole</i> <i>negative pole</i></p>	<p>O₂</p> <p>δ^- : O : O : δ^-</p> <p>nonpolar</p> <p>Shape: <u>linear</u></p> <p>Molecular Polarity: <u>nonpolar</u></p>

positive charge region
 negative charge region