Worksheet: Molecular Geometry and Intermolecular Forces **Name**_____

Molecular Geometry

A molecule consisting of only two atoms has a _____ shape. A molecule with _____ atoms bonded to the central atom with _____ unshared pair(s) of electrons has a **linear** shape. A molecule with _____ atoms bonded to the central atom with _____ unshared pair(s) of electrons has a **trigonal planar** shape. A molecule with _____ atoms bonded to the central atom with _____ unshared pair(s) of electrons has a **tetrahedral** shape. A molecule with _____ atoms bonded to the central atom with _____ unshared pair(s) of electrons has a **bent** shape. A molecule with _____ atoms bonded to the central atom with _____ unshared pair(s) of electrons has a **trigonal pyramidal** shape.

Predicting Molecular Shapes

Draw each molecule and predict the shape each molecule will form.

IBr

CCl_4

PCl_3

H_2S

C_2H_2

SO_3

NH_2Cl

Polarity in Molecules

Determine the type of bonds in each of these molecules using the "Table of Electronegativities." Then, determine whether each of these molecules will be polar or nonpolar. Explain your reasoning.

IBr

CCl_4

PCl_3

H_2S

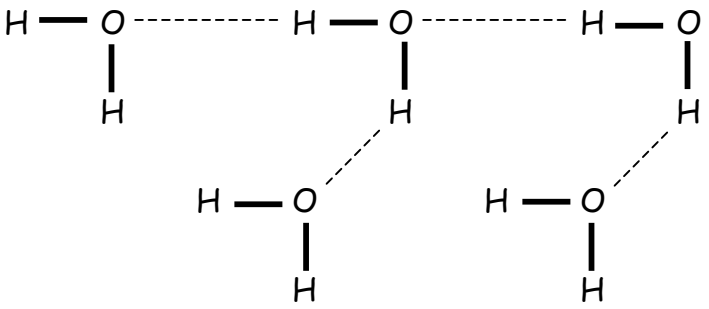
C_2H_2

SO_3

NH_2Cl

Intermolecular Forces

While bonding is the force of attraction WITHIN molecules, _____ are the forces of attraction BETWEEN molecules. Circle these forces in the following diagram.



Define "Dipole-dipole Forces."

Define "Hydrogen Bonding."

Define "London-Dispersion Forces."