Unit 4 problem set 4
Covalent Bonding Packet

Objective: You will determine how atoms are joined in a covalently bonded molecule, and how to name those compounds.

Materials: molecular model kit

Method and Observations:

I want you to do 5 things with each molecule below. You need to find the **dot structure, 3-D sketch, type of geometry, polarity and name** of each molecule. Organize this in a neat format.

The spheres are arranged according to groups and atoms:

Group/Atom	Color
IV	Black
V	Blue
VI	Red
F or Br	Orange
Cl	Green
I	Purple
H	White

H_2

Dot Structure	**3-D Sketch**	
Geometry	**Polarity**	**Name**

F_2

Dot Structure	**3-D Sketch**	
Geometry	**Polarity**	**Name**

Cl_2

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

PH_3

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

PBr_3

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

CH_4

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

CHI_3

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

CH_2Cl_2

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

H_2S

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

H_2O

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

NH_3

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

NI_3

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

$SiCl_4$

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

O_2

Dot Structure		3-D Sketch
Geometry	**Polarity**	**Name**

CO_2

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

SiO_2

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

C O

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

N_2

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

C_2H_4

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

C_2H_2

Dot Structure	3-D Sketch	
Geometry	**Polarity**	**Name**

Calculations and Results:

•Put the compounds in a table of polar vs. nonpolar molecules.

Polar	Nonpolar

• Without using models, explain how you could experimentally, in a lab, determine if these molecules were polar or non-polar. Incorporate a drawing here.

Polar	Nonpolar

Conclusion:

•List the "real world" uses of two of the 20 compounds used in this lab.