EXPERIMENT #17

Name: _____

Date: _____

Partner: _____

Set 1

Formula	# of e^-	Lewis Structure	Bond Polarity (P/NP)	Shape of Molecule	Molecular Polarity (P/NP)
H_2					
F_2					
Br_2					
I_2					
N_2					
Cl_2					
HCl					
HBr					
BrCl					

Formula	# of e^-	Lewis Structure	Bond Polarity (P/NP)	Shape of Molecule	Molecular Polarity (P/NP)
H_2O					
CO_2					
H_2S					
NH_3					
NCl_3					
CCl_4					
CH_3Cl					
CH_2Cl_2					
$CHCl_3$					
CH_3Br					

Questions:

1. Calculate the electronegativity difference and determine the bond type for each of the following bonds:

Bond	Electronegativity difference	Bond Type
H-O	_____	_____
H-N	_____	_____
Br-Cl	_____	_____
H-S	_____	_____
H-C	_____	_____
C-O	_____	_____
K-Br	_____	_____

2. Rank the bonds in question 1 in order of increasing polarity (lowest to highest)

_____ < _____ < _____ < _____ < _____ < _____

lowest highest

3. Classify each of following molecules as ionic crystal, polar covalent or non-polar covalent:

Br_2 ‰ _____	MgS ‰ _____	MgO ‰_____
CCl_4 ‰ _____	BeO ‰ _____	HI ‰ _____
CO_2 ‰ _____	H_2O ‰ _____	N_2 ‰ _____
BaO ‰ _____	AlN ‰ _____	CaO ‰ _____
KCl ‰ _____	LiBr ‰ _____	CO ‰ _____

3. Both water and carbon dioxide are tri-atomic molecules with similar formulas. Explain why one of these is polar and the other is non-polar.