1. What is the difference between a polar and nonpolar bond?
2. How can electronegativity be used to determine if a bond is polar covalent, nonpolar covalent, or ionic?
3. In the C—O bond are the electrons spending more time on one atom? If so state which one and explain why.
4. Why do polar bonds have partial charges, but nonpolar bonds do not? Include electron distribution and electronegativity in the explanation.
5. In **each pair** of bonds, **circle** the **more polar bond**.

a) C—O and C—N c) B—O and B—S

b) P—Br and P—Cl d) B—F and B—I

1. Put the following bonds in order of least polarity to greatest polarity

a) C—N b) C—H c) C—Br d) S—O

1. For each of the bonds listed below, **classify each bond** and **add polarity symbols/arrows on polar bonds only**

a) Na—Cl c) Cl—Cl

b) C—H d) S—Cl

1. Write the formulas for the following molecular compounds
   1. Phosphorus pentachloride
   2. Iodine heptafluoride
   3. Iodine dioxide
   4. Carbon tetrabromide
   5. Diphosphorus trioxide
   6. Trisilicon tetranitride
2. Write the names for the following compounds
   1. NCl3
   2. BI3
   3. SO3
   4. N2H4
   5. N2O3
   6. Cl2O7

For the following questions draw **Lewis structures** and label any **polar bonds** with **polarity arrows/partial charges**. There will be one central atom unless otherwise indicated.

1. HBr
2. N2H2 (will contain a N-N bond)
3. PBr3
4. C2H6  (will contain a C-C bond)
5. OCl2
6. SiBr3Cl
7. PO33-