Skill Practice 23

Electronegativity Practice

Name: _____

Date: _____

1. What does it mean to say that a bond is polar?

   One of the atoms involved in the bond has a greater electronegativity than the other atom and therefore it has a partial negative charge.

2. Label each of the following bonds as ionic (I), polar covalent (PC) or nonpolar covalent (NC).

__I__ Na—Cl	__NC_ N—O	_NC__ F—F
__PC_ S—O	_NC__ H—C	_NC__ P—S
__I__ Mg—F	__PC_ P—O	__PC_ Br—N

3. For each of the sets of bonds, rank them in order from most polar to least polar.

   A) F—F, S—O, H—C, P—S
   S—O, P—S, H—C, F—F

   B) H—N, H—O, H—F, H—Cl
   H—F, H—O, H—N, H—Cl

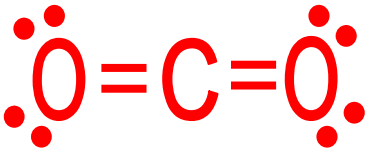
   C) C—H, C—O, N—O, S—C
   C—O, N—O, C—H, S—C

   D) As—S, P—N, N—N, Cl—C
   P—N, Cl—C, As—S, N—N

   E) H—F, H—O, Se—Br, Si—Cl
   H—F, H—O, Si—Cl, Se—Br

4. Draw each of the following structures. Indicate whether each has polar or nonpolar bonds.

a) CO_2



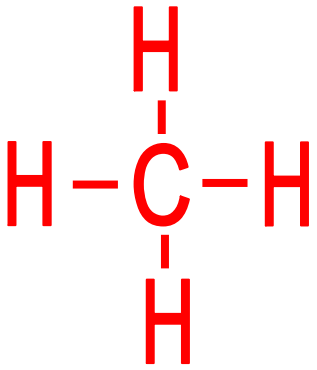
Polar bonds? Yes

Polar overall? No

Bond angle: 180°

Shape: Linear

c) CH_4



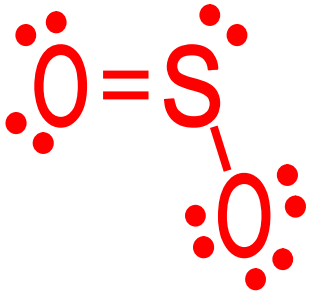
Polar bonds? No

Polar overall? No

Bond angle: 109°

Shape: Tetrahedral

b) SO_2



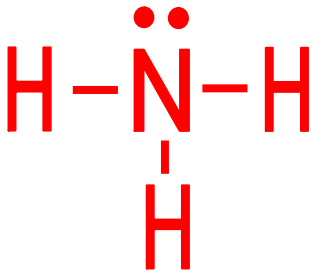
Polar bonds? Yes

Polar overall? Yes

Bond angle: 120°

Shape: Bent

d) NH_3



Polar bonds? Yes

Polar overall? Yes

Bond angle: 109°

Shape: Trigonal pyramidal