These are the responses to the weekly web work #8 shown in class on Wednesday March 5, 2003

Turbo
q1 = Four
q2 = 109
q3 = Tetrahedral

Buggy
q4 = 4
q5 = 109.5
q6 = trigonal pyramidal

Goober
q7 = 3
q8 = 120
q9 = bent

smiley
q10 = The II arrow is pointing to a nitrogen atom that is attached to three different atoms and one loan pair. That would give it four electron clouds around this nitrogen. It also gives the shape of trigonal pyramidal and a bond angle of 109. The III arrow is pointing to a nitrogen atom that is attached to two different atoms and one loan pair of electrons. This means it has 3 electron clouds around it. It has a shape of bent and a bond angle of 120.

Lookie Lookie
q11 = 5
q12 = The bond angles are 90 and 120 degrees. The three chlorine atoms in the same plane create a trigonal planar shape which has 120 degrees. The other chlorine atom, which isn't in the same plane as the others, is perpendicular to the other chlorine atoms having a 90 degree angle
q13 = Trigonal Bipyramidal

candi cane
q14 = This molecule is polar because the atoms are not all the same and there is a difference in electronegativity.

CAM
q14 = Fluorine is the highest in electronegativity with a 4.0. Chlorine is pretty high up there itself with a 3.0. But the fluorine wins over all the others, creating polarity in fluorine's favor.

Ernie
q15 = 109 degrees. They are the same b/c they are all tetrahedral (they each have 4 charge clouds), and tetrahedral shapes have the same angles, which are 109 degrees.
q16 = Yes, view 1 b/c I can see how the angles look more easily than in the other 2 views (although view 3 is similar and easier also). The shape around the central C atom is tetrahedral. The other 2 carbon atoms have a tetrahedral shape as well.

Sassy S. C.
q17 = the C-O-H angle is 109.5 the oxygen atom has 4 charge clouds which is the tetrahedral family but the shape is bent as there are two lone pairs around the oxygen atom that would only be seen in a Lewis dot structure.

Common misconception about electronegativity:
Electronegativity is the ability of an atom to attract electrons in a covalent bond. Students mistakenly confuse number of lone pairs with electronegativity.

Common misconception about trigonal bipyramidal:
Some students thought that having 5 “clouds” made it polar or that since it has two different bond angles, 120 and 90 that it was inherently polar. $PFCl_4$ is polar because it has atoms of different electronegativities.