

BOND ANGLES

NAME _____

SECTION _____

1. a. Estimate the O–C–O bond angle in the following molecules, in which the central atom is carbon and the terminal atoms are oxygen.

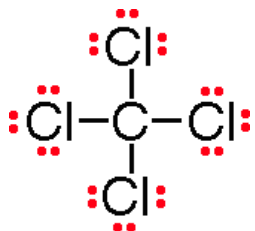


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- b. Write the formula for each species depicted above.

The model on the left is CO_2 , while the model on the right is CO_3^{2-} .

2. a. Draw the Lewis electron dot structure for CCl_4 and identify all the bonding pairs and nonbonding pairs of electrons on the central atom.



In the image to the left the covalent bonds between carbon and chlorine are depicted as lines and the lone pair electrons on chlorine are depicted as red circles, where each circle symbolizes an electron. Given this information answer the following questions. The central carbon atom has four bonding domains and zero nonbonding domains of electrons.

- b. What is the Cl–C–Cl bond angle?

The Cl–C–Cl bond angle is 109.5° . While it looks like it is 90° , central atoms with four domains of electrons are 109.5° .

3. Draw the Lewis electron dot structure for NF_3 and identify all the bonding pairs and nonbonding pairs of electrons.

