

Chemical Formulas

A molecule's chemical formula tells you the ratio of atoms of each element in the compound.

Two Molecules of Methane

coefficient = # of molecules 2CH_4 subscript = # of atoms
1 carbon atom 4 hydrogen atoms

No subscript means that you have one atom.

In balancing chemical equations, you cannot change the subscripts.

You can only change coefficients.

Changing subscripts changes the type of compound.

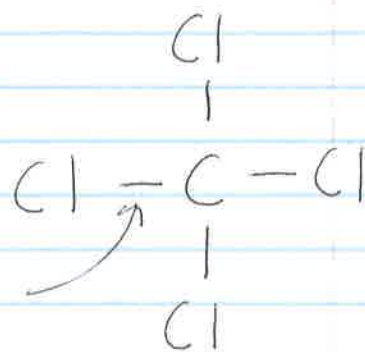
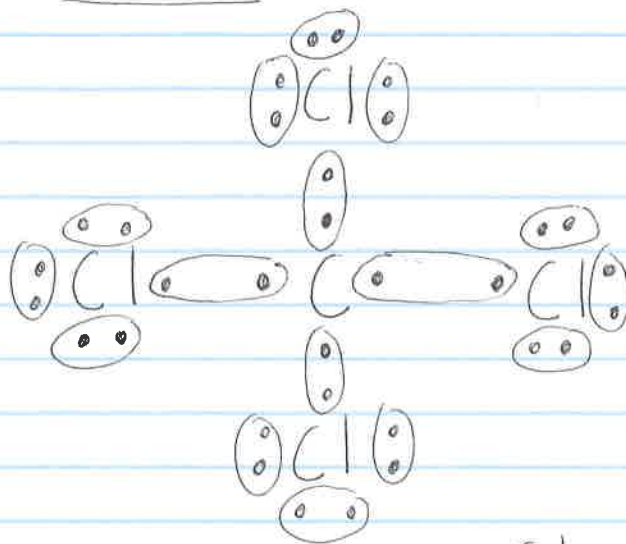
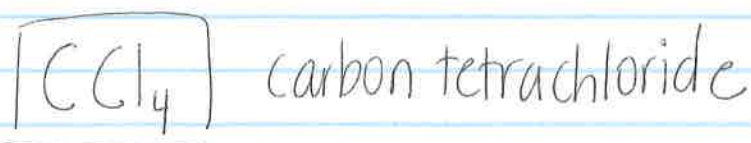
Covalent Bonds

A covalent bond is one in which electrons are shared.

Non-metals pair with other non-metals to form covalent bonds.

H_2O , H_2O_2 , CH_4 , CO_2 , P_4S_3
water hydrogen methane carbon phosphorus
dihydrogen peroxide dioxide sulfide
oxide

Examples of Covalent Bonds



line represent a single bond or a pair of shared electrons



Hydrogen has a full 1st orbital with 2 electrons.

Nitrogen has 8 valence electrons + is stable.