Lewis **DOT** Structures Day One - COVALENT MODELING Name _____

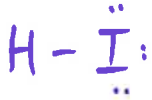
STEPS:

1) Count up valence electrons of all atoms in molecule. (Make sure you have all NONMETALS.)
2) Locate central atom (least electronegative usually).
3) Arrange other atoms around central atoms with single bonds.
4) Use lone pairs to fill in any incomplete octets. (check to make sure each atom has exactly an octet)
5) Count up electrons in drawn structure, compare to original amount of valence electrons available.
6) If too many electrons are in drawn structure, try double or triple bonds until electron number matches.

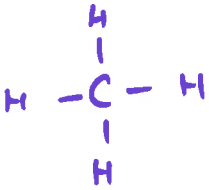
You try: (single bonds only)

Formula: F_2
VE: 14

Formula: HI
VE: 8



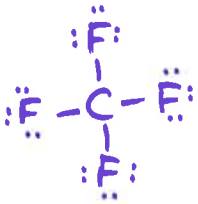
Formula: CH_4
VE: 8



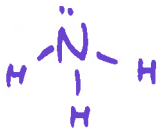
Formula: OCl_2
VE: 20

Formula: H_2S
#VE: 8

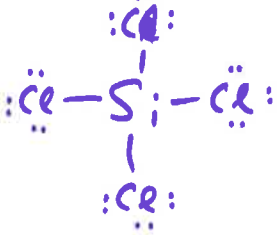
Formula: CF_4
#VE: 32



Formula: NH_3
#VE: 8

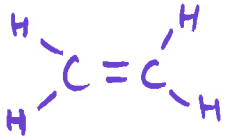


Formula: $SiCl_4$
#VE: 32



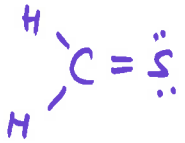
You try: single and double bonds: (carbon in the middle when possible)

Formula: C_2H_4
#VE: 12



Formula: CO_2
#VE: 16

Formula: CH_2S
#VE: 12



Formula: ONF
#VE: 18

You try: single, maybe double and maybe triple bonds:

Formula: N_2
#VE: 10

Formula: HCN
#VE: 10

Formula: HCCH (C_2H_2)
#VE: 10

Generalities:

Carbon group likes 4 bonds and 0 lone pairs
Nitrogen group likes 3 bonds and 1 lone pairs
Oxygen group likes 2 bonds and 2 lone pairs
Fluorine group likes 1 bonds and 3 lone pairs