

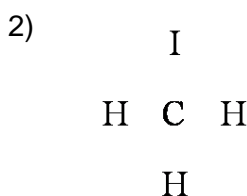
Lewis Diagram Tips For Covalent Bonds

1. Count the valence electrons
2. Place the least electronegative element at the center (except H, always outside atom)
3. Put the remaining atoms around the central atom (symmetrically if possible)
4. Add single bonds between the center atom and the outer atoms.
5. Add lone pairs to the outer atoms
6. Add lone pairs to the center atom
7. Make sure each atom has 8 electrons (if not, you may need a double or triple bond!)

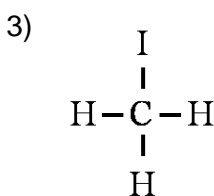
DON'T FORGET TO KEEP TRACK OF HOW MANY ELECTRONS YOU USE!

YOU CAN ONLY USE UP TO THE NUMBER OF VALENCE ELECTRONS YOU HAVE!

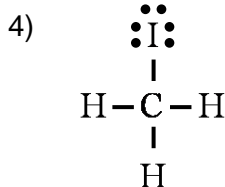
1) CH_3I $4 + 1 + 1 + 1 + 7 = 14 \text{ v.e}$



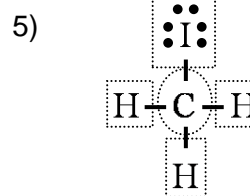
$0 \text{ e}^- \text{ used}$



$8 \text{ e}^- \text{ used, } 6 \text{ e}^- \text{ left}$



$14 \text{ e}^- \text{ used, } 0 \text{ e}^- \text{ left}$



$\text{each atom has } 8 \text{ e}^-$

Number of Bonds Certain Atoms Like to Make	
H (always)	1
F, Cl, Br (if not the central atom)	1
C, Si	4
O (if not the central atom)	1 or 2

Exceptions to the Octet Rule <i>These atoms don't always want 8 v.e. to be stable</i>	
ATOM	# e ⁻
H	2
B	6
P	10
S	12

BOND	SYMBOL	# OF SHARED e ⁻	
single	X—X	2	
double	X=X	4	Usually the only atoms you will see making multiple bonds will be: C, N, O, S
triple	X≡X	6	

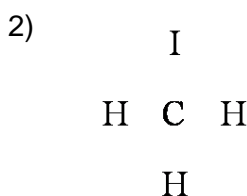
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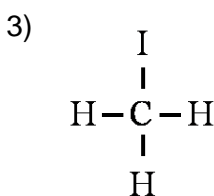
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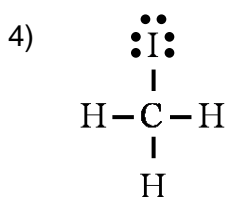
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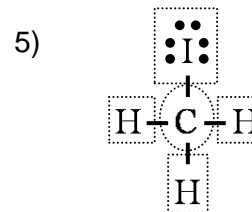
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