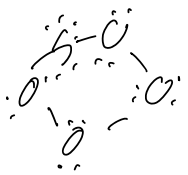
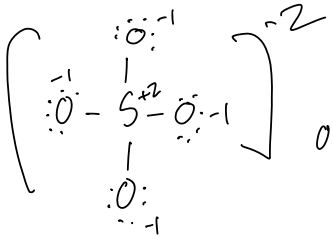
Good Lewis structure

All e⁻ and atoms accounted for

try for octet, "normal" # of bonds, all FC being zero

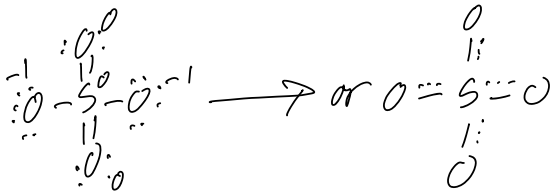
SO_4^{2-} → 6 + 4×6 → 32 e⁻



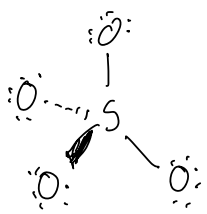


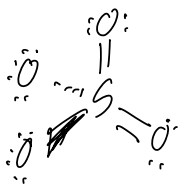
better octet
worse FC

or



worse octet
better formal charge



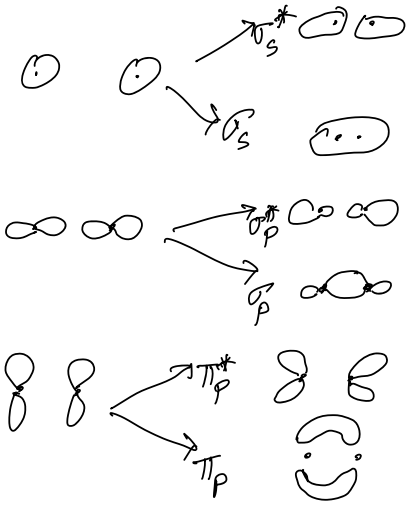


MO diagrams

s/s < antibond / bonding → always σ

p/p < antib / bonding → σ

p/p < antib / bonding → π



Li
$1s^2 2s^1$

2s ↿

1s ⇅

Li_2

$-\sigma_{2s}^*$

⇅ σ_{2s}

⇅ σ_{1s}^*

⇅ σ_{1s}

$Li_{1s^2 2s^1}$

↿ 2s

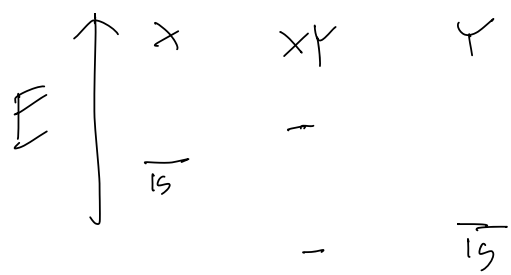
⇅ 1s

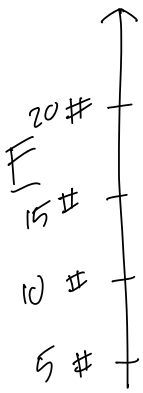
Li_2^{+1} - 5e⁻ BO = ½

Li_2^{-1} - 7e⁻ BO = ½

BO = $\frac{\text{bonding} - \text{antibonding}}{2}$

O_2, F_2





↑ energy in
photon in

↓ energy out
photon out

$E_n = \frac{-Rhc}{n^2}$

$R = 1.0974 \times 10^7\ m^{-1}$

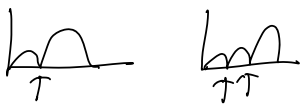
$h = 6.626 \times 10^{-34}\ J\,sec$

$C = 3 \times 10^8\ m/sec$

Figure out how much energy needed to be put in
or how much needed to come out

$E = h\nu$ and $c = \lambda\nu$

$E = \frac{hc}{\lambda}$



	humps	nodal planes	spherical node
1s	1	0	0
2s	2	0	1
2p	1	1	0
3s	3	0	2
3p	2	1	1
4s	4	0	3
3d	1	2	0
4p	3	1	2

$$\ln\left(\frac{P_2}{P_1}\right) = \frac{-\Delta H_{evap}}{R}\left(\frac{1}{T_2} - \frac{1}{T_1}\right)$$

P_1 = vapor pressure at T_1

P_2 = vapor pressure at T_2

Imagine $T_1 = 10^\circ C$ $P_1 = 0.1\ atm$

$T_2 = 50^\circ C$ $P_2 = \cancel{0.1\ atm}\ 0.9\ atm$