

$\Delta H_{rxn} = n \sum \text{prod} - n \sum \text{react.}$

Bond Energies

$n \sum \text{Bonds Broken (React)} - n \sum \text{Bonds Formed (Prod)}$

Ex: $2 \text{C}_2\text{H}_6 + 7 \text{O}_2 \rightarrow 4 \text{CO}_2 + 6 \text{H}_2\text{O}$

BE = Bonds Broken
Rxn — Bonds Formed

Jan 18-7:48 AM

⑱ Find $\frac{\text{KJ} \checkmark}{\text{°C} \checkmark}$

C_3H_8

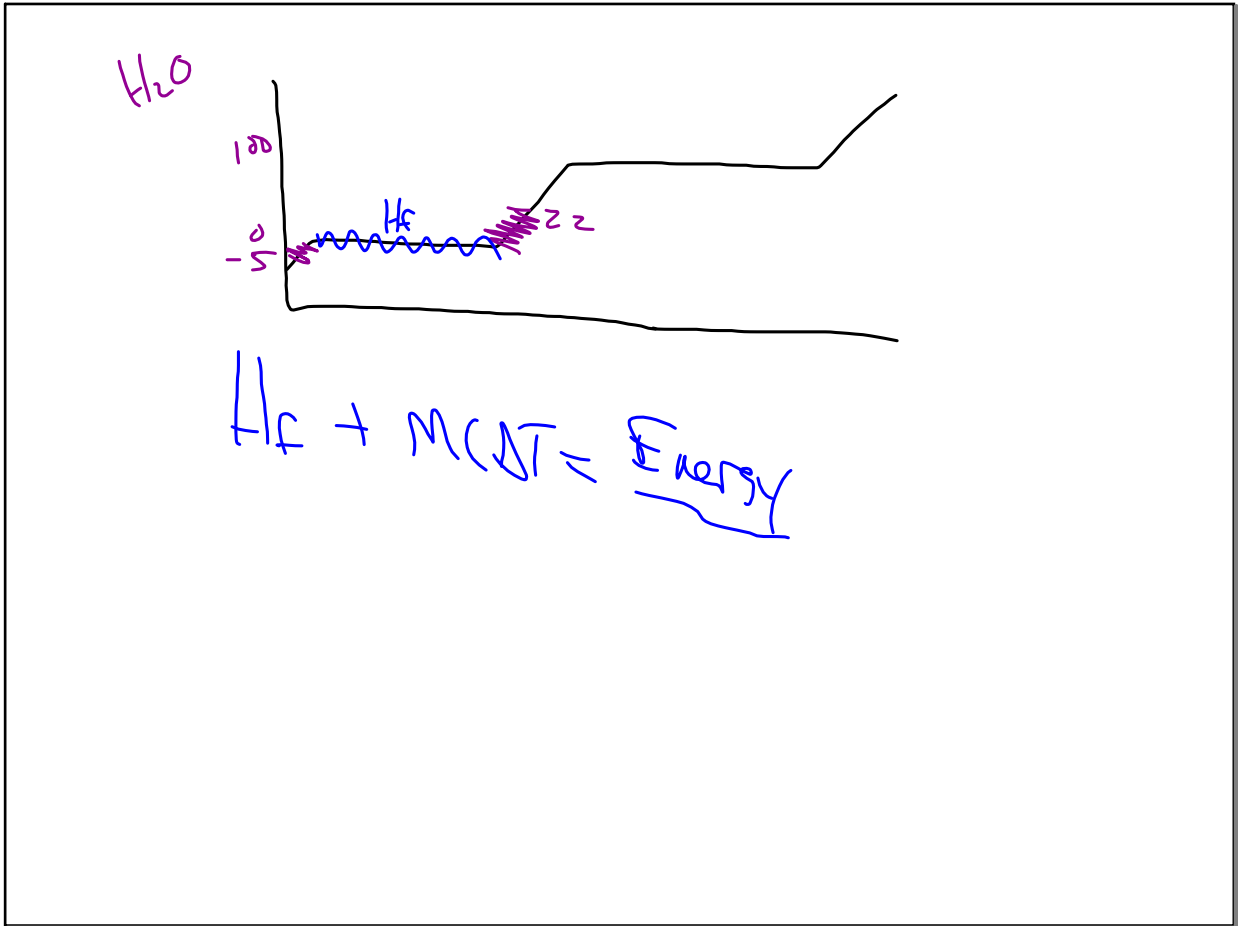
~~$\frac{2220 \text{ KJ}}{\text{mole C}_3\text{H}_8}$~~

~~$2.5 \text{ g C}_3\text{H}_8$~~

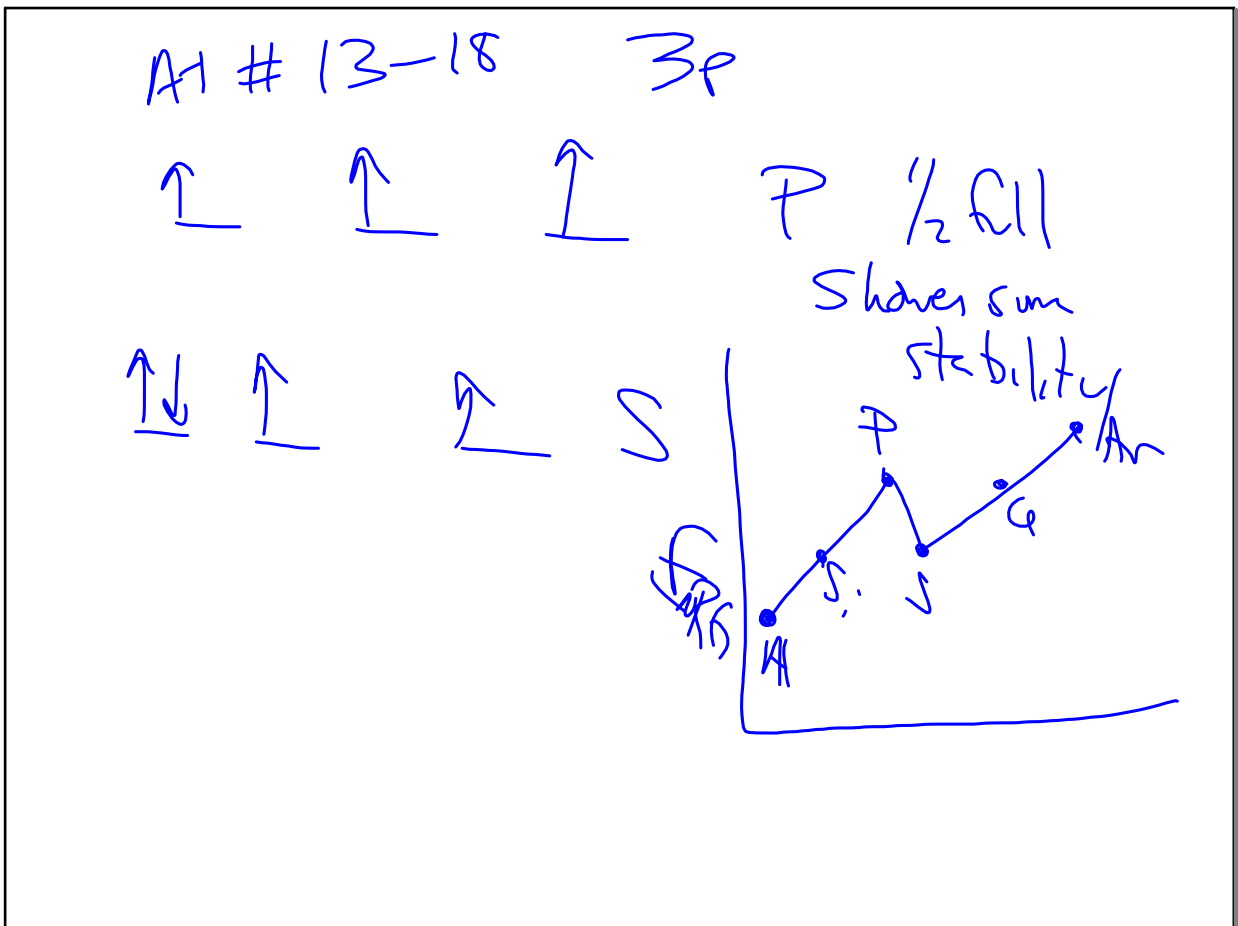
~~$\Delta T = 7.7 \text{ °C}$~~

$\frac{2220 \text{ KJ}}{\text{mole C}_3\text{H}_8}$	$\frac{1 \text{ mole C}_3\text{H}_8}{44 \text{ g C}_3\text{H}_8}$	$2.5 \text{ g C}_3\text{H}_8$
7.7 °C		

Jan 18-8:04 AM



Jan 18-8:12 AM



Jan 18-8:16 AM

PEL , Sublevel , Orbital , $S \rightarrow \text{SPH}$
 $\text{MAX } (n-1)$, $-l$ to $+l$

S	P	d	f
0	1	2	3

-1 0 $+1$ -2 -1 0 $+1$ $+2$

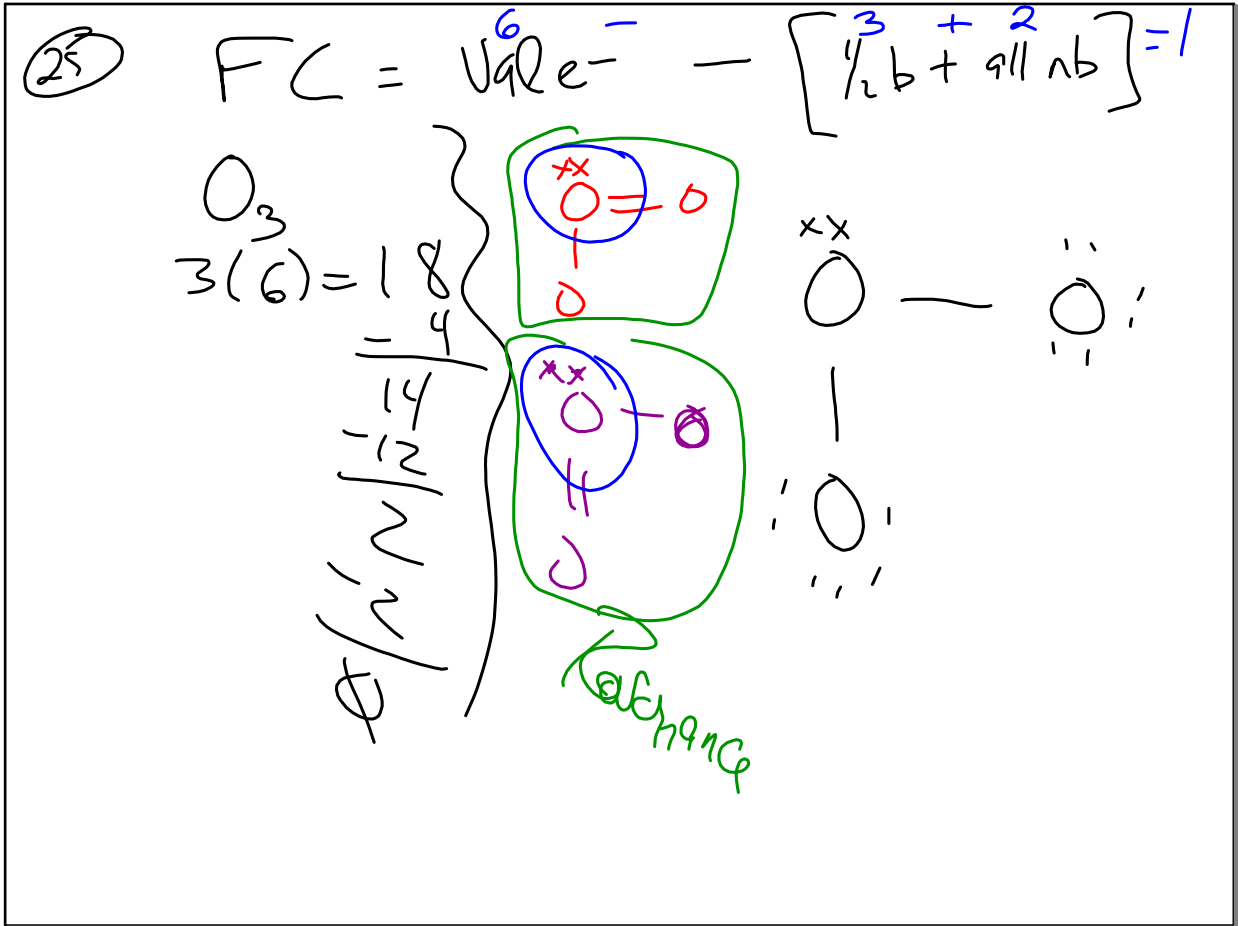
Jan 18-8:19 AM

(24) (A_0) H (M_0) H (A_0)

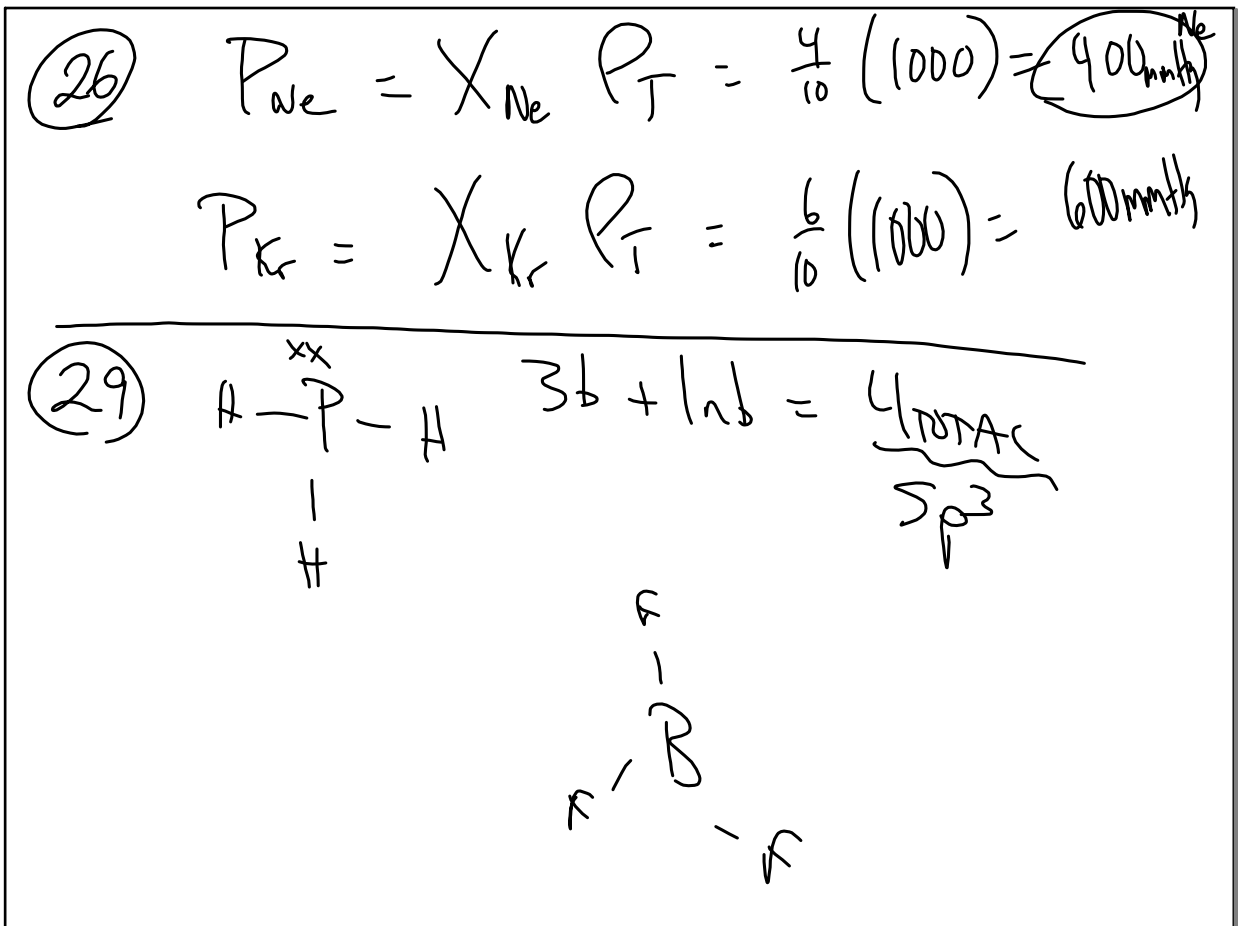
\uparrow $1s$ σ_{1s}^* \uparrow $1s$
 $\uparrow \downarrow$ σ_{1s}

$\text{BO} = \frac{1}{2} (\text{B} - \text{anti-B}) = 1$

Jan 18-8:36 AM



Jan 18-8:38 AM



Jan 18-8:43 AM

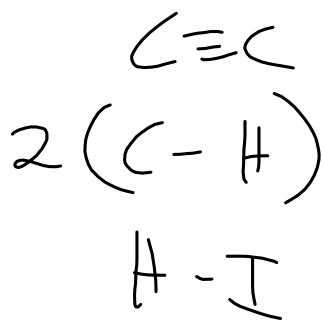
20 Titration

~~M-moles~~

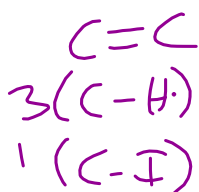
$$\begin{aligned} \# \# \quad \# \text{ moles Acid} &= \# \text{ moles Base} \\ n (M_A * l_A) &= n (M_B * l_B) \\ 1 (M_A * 200_{ml}) &= 1 (0.2 * 31^*) \\ & \quad \text{Use } n \end{aligned}$$

Jan 18-8:48 AM

32 Broken



Formed



Jan 18-8:54 AM

(33) $PV = nRT$

$\frac{PV}{1} = \frac{gRT}{MW}$

$\frac{PV(MW)}{RT} = \frac{g}{1}$

NO₂
14 + 2(16)
= 46

Jan 18-8:57 AM

(EC1)

O ₂	0.650	$P_{\text{O}_2} = X_{\text{O}_2} P_T$ $= 0.018 (760)$ 13.68 mm Hg
H ₂	0.250	
H ₂ O	0.054	
H ₂ F	0.028	
Other	0.018	
1.000		

Jan 18-9:00 AM

(EC2) $2\text{NH}_3(g) + \text{H}_2\text{SO}_4 \rightarrow (\text{NH}_4)_2\text{SO}_4$

$V = \text{---} \text{ l}$

$T = 15^\circ\text{C}$

$P = 1.15 \text{ atm}$

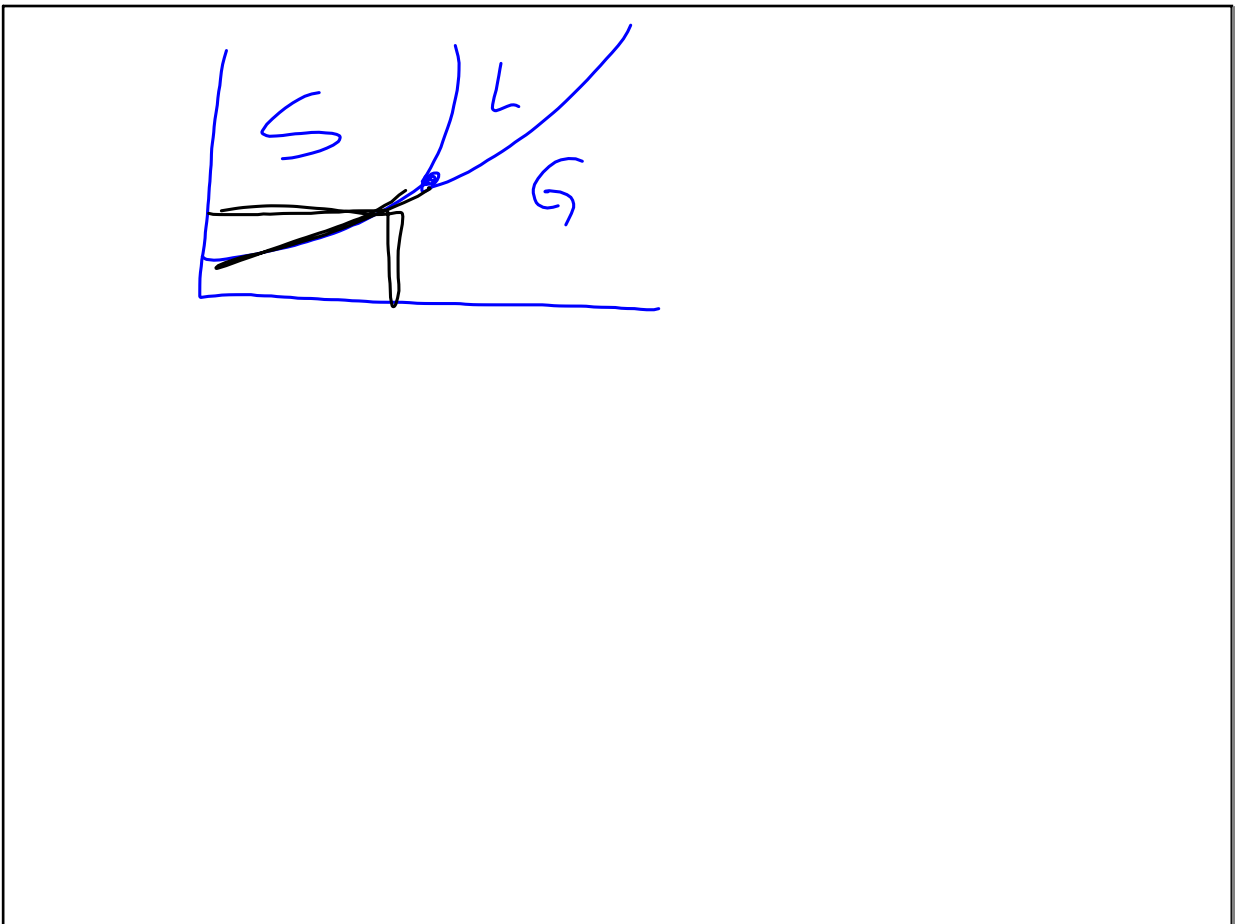
$PV = nRT$

$V = \frac{nRT}{P} = \frac{(0.08206)(288)}{1.15}$

150g AS	1 mole AS	2 mole A
	132g AS	1 mole AS

2.273 mole A

Jan 18-9:03 AM



Jan 18-9:13 AM