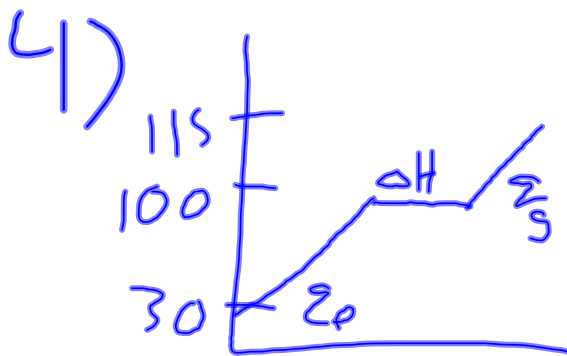


## Check Homework - Worksheet



$$\Delta E = q + \Delta H + q_g$$

$$= 45,461.5 + 350,940 + 4673.25$$

$$q_p = (155g)(4.19 \text{ J/g}\cdot\text{C})(70^\circ) = 45,461.5 \text{ J}$$

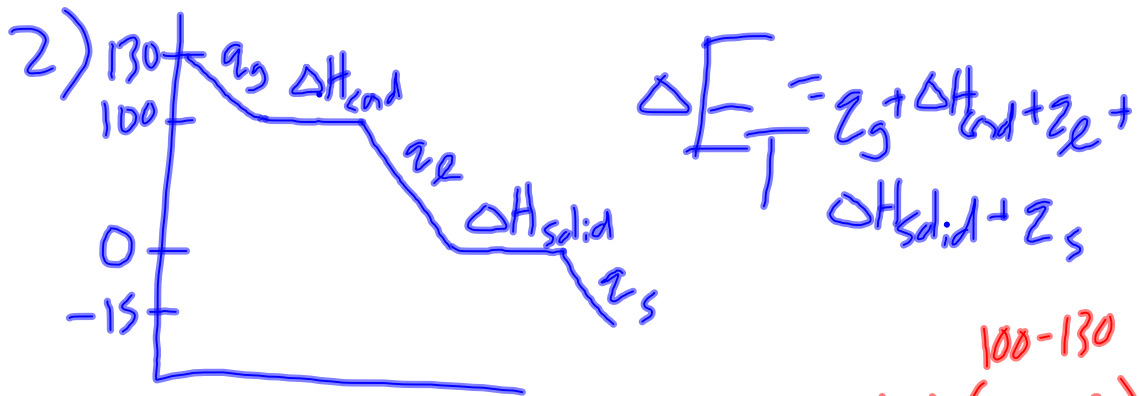
$= 401,000 \text{ J}$   
or  $401 \text{ kJ}$

$$\Delta H_{\text{vap}} = n H_{\text{vap}} = \left( \frac{155g}{18.02g/mol} \right) (40.8 \text{ kJ/mol})$$

$$= 350.94 \text{ kJ}$$

$$q_g = m(\Delta T) = (155g)(2.01 \text{ J/g}\cdot\text{C})(15^\circ\text{C})$$

$$= 4673.25 \text{ J}$$



$$q_g = m C \Delta T = (10,000 \text{ g}) (2.01 \text{ J/g}\cdot\text{C}) (-30^\circ\text{C})$$

$$= -603,000 \text{ J}$$

$$\Delta H_{\text{cond}} = n(-H_{\text{vap}}) = \left( \frac{10,000 \text{ g}}{18.02 \text{ g/mol}} \right) (-40.8 \text{ kJ/mol})$$

$$= -22,641.5 \text{ kJ}$$

$$q_l = m C \Delta T = (10,000 \text{ g}) (4.19 \text{ J/g}\cdot\text{C}) (-100)$$

$$= -4,190,000 \text{ J}$$

$$\Delta H_{\text{solid}} = n(-H_{\text{fus}}) = \left( \frac{10,000 \text{ g}}{18.02 \text{ g/mol}} \right) (-6.03 \text{ kJ/mol})$$

$$= -3,346.3 \text{ kJ}$$

$$q_s = m C \Delta T = (10,000 \text{ g}) (2.01 \text{ J/g}\cdot\text{C}) (-15)$$

$$= -301,500 \text{ J}$$

$$\Delta E_T = -603 \text{ kJ} - 22,641.5 \text{ kJ} - 4190 \text{ kJ} - 3,346.3 \text{ kJ} - 301.5 \text{ kJ}$$

$$= -31,082.3 \text{ kJ} = -32,000 \text{ kJ}$$

$$1 \text{ MJ} = 1,000 \text{ kJ} = 1,000,000 \text{ J}$$

# Quiz Tomorrow!

(Don't Panic)

# Total Energy Problems

## Worksheet 55