## General Chemistry 2 | 3<sup>rd</sup> Quarter

## WW6: Hess' Law

January 21 2021

## Find ΔH.

Given:

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$$H_2 + \frac{1}{7}O_2 \rightarrow H_2O$$
  $\Delta H^2 = -241.82 \text{ kJ}$   
 $2F_e + \frac{3}{7}O_1 \rightarrow F_{e_2}O_3$   $\Delta H = -824.2 \text{ kJ}$   
 $3f_{e_2}O_3 + H_2 \rightarrow 2F_{e_3}O_4 + H_2O$   $\Delta H = -830.22 \text{ kJ}$   
 $3F_e + 2O_2 \rightarrow F_{e_3}O_4$   $\Delta H = ?$ 

- 1/2	$\frac{(1/2)H_2O}{(1/2)H_2} \rightarrow \frac{(1/2)H_2}{(1/2)H_2} + \frac{(1/4)O_2}{(1/4)O_2}$	ΔH = -241.82 kJ * - ½ = 120.91 kJ
3/2	3Fe + $(9/4)O_2 \rightarrow \frac{(3/2)Fe_2O_3}{}$	ΔH = -824.2 kJ * 3/2 = -1236.3 kJ
1/2	$(3/2)\text{Fe}_2\Theta_3 + (1/2)\text{H}_2 \rightarrow \text{Fe}_3\text{O}_4 + (1/2)\text{H}_2\Theta$	ΔH = -830.22kJ * ½ = -415.11 kJ
	$3Fe + 2O_2 \rightarrow Fe_3O_4$	ΔH = -1530.5 kJ