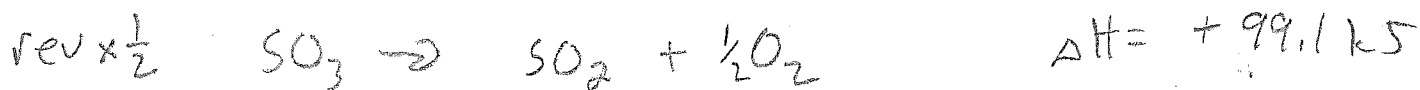
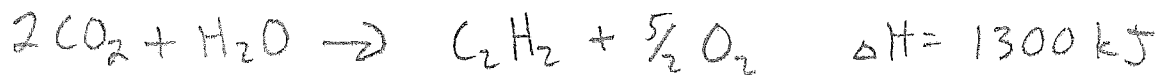


①

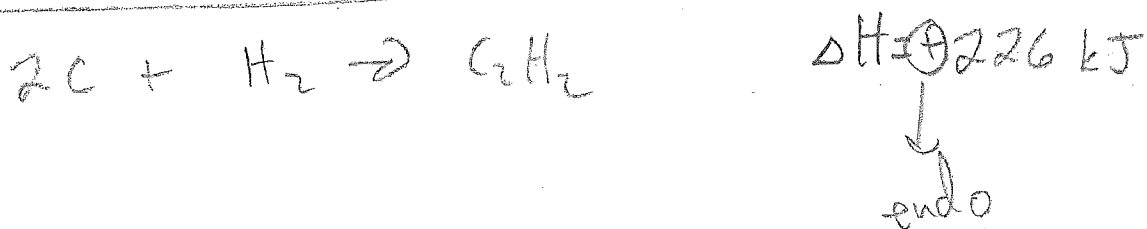
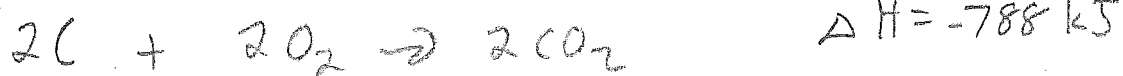


②

rev

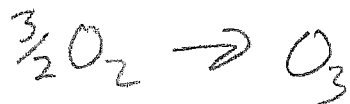


2x



3

rev(x $\frac{1}{2}$ )



$$\Delta H = 213.5 \text{ kJ}$$

rev(x $\frac{1}{2}$ )



$$\Delta H = -247.5 \text{ kJ}$$



$$\Delta H = -199 \text{ kJ}$$



$$\Delta H = -233 \text{ kJ}$$



exo

4

(x3)



$$\Delta H = -69 \text{ kJ}$$

rev



$$\Delta H = +39 \text{ kJ}$$

rev(2x)

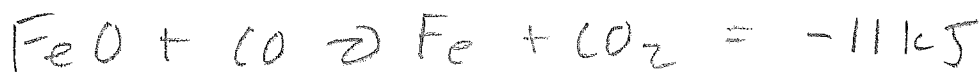


$$\Delta H = -36 \text{ kJ}$$

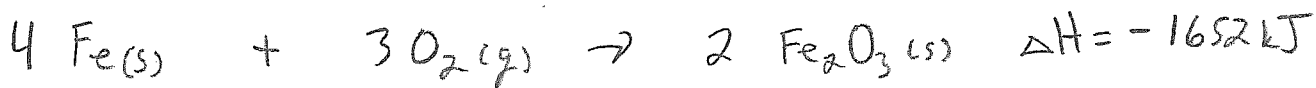
(x $\frac{1}{6}$ )



$$\Delta H = -66 \text{ kJ}$$



## Enthalpy and Stoich



- a) How much heat is released when 4.00 mol of iron is reacted with excess  $\text{O}_2$ ?

$$4.00 \text{ mol Fe} \times \frac{-1652 \text{ kJ}}{4 \text{ mol Fe}} = \textcircled{-1650 \text{ kJ}}$$

- b) How much heat is released when 1.00g of iron is reacted with excess  $\text{O}_2$ ?

$$1.00 \text{ g Fe} \times \frac{1 \text{ mol Fe}}{55.85 \text{ g Fe}} \times \frac{-1652 \text{ kJ}}{4 \text{ mol Fe}} = -7.39 \text{ kJ}$$

- c) How much heat is released when 10.0g of Fe and 2.00g  $\text{O}_2$  are reacted?

Just times part b by 10

$$10.0 \text{ g Fe} = -73.9 \text{ kJ}$$

$$2.00 \text{ g O}_2 \times \frac{1 \text{ mol O}_2}{32.00 \text{ g O}_2} \times \frac{-1652 \text{ kJ}}{3 \text{ mol O}_2} = \textcircled{-34.4 \text{ kJ}}$$