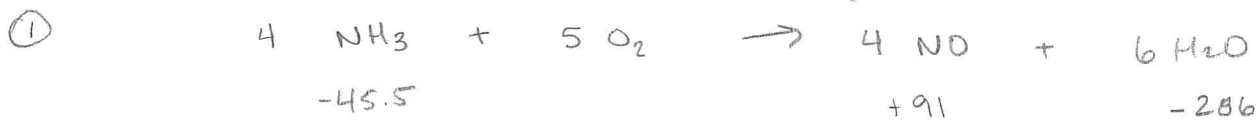
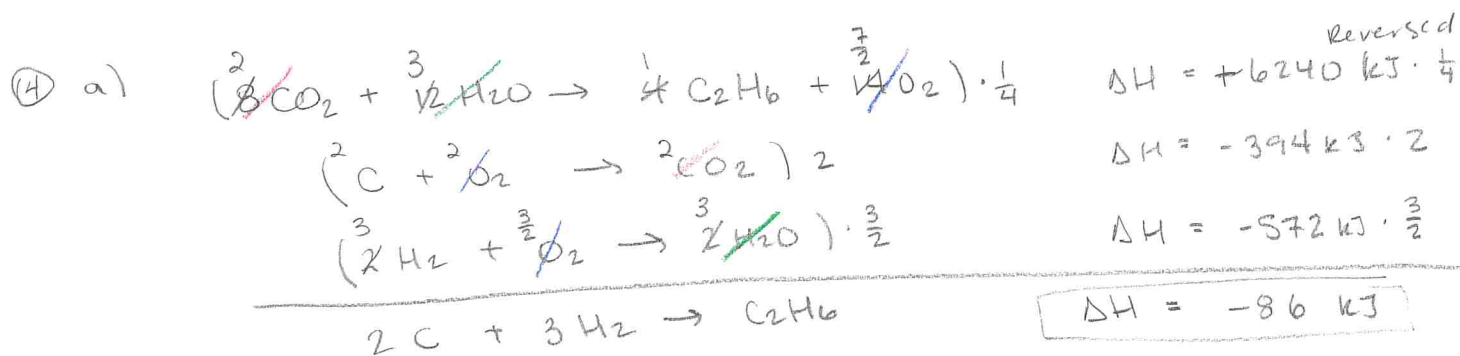
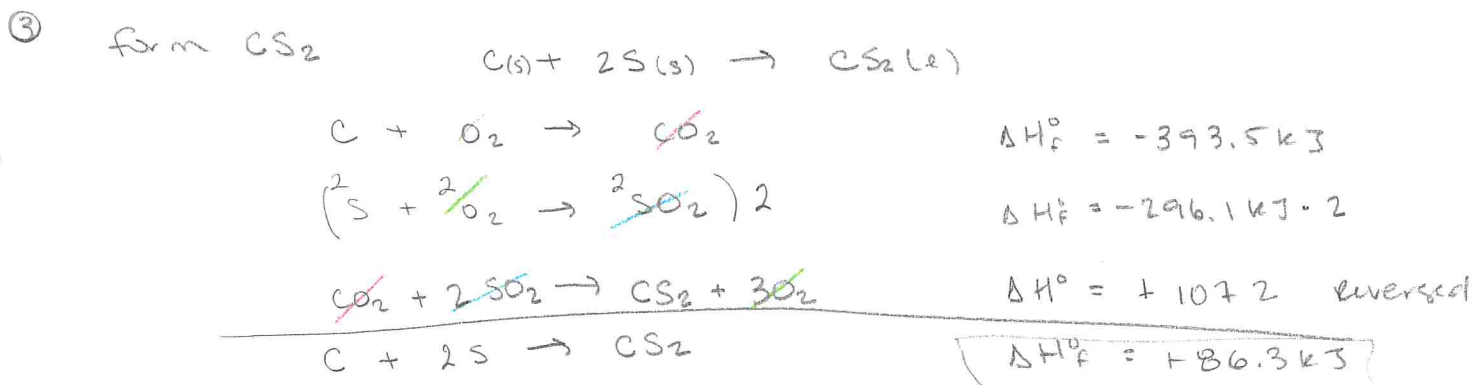
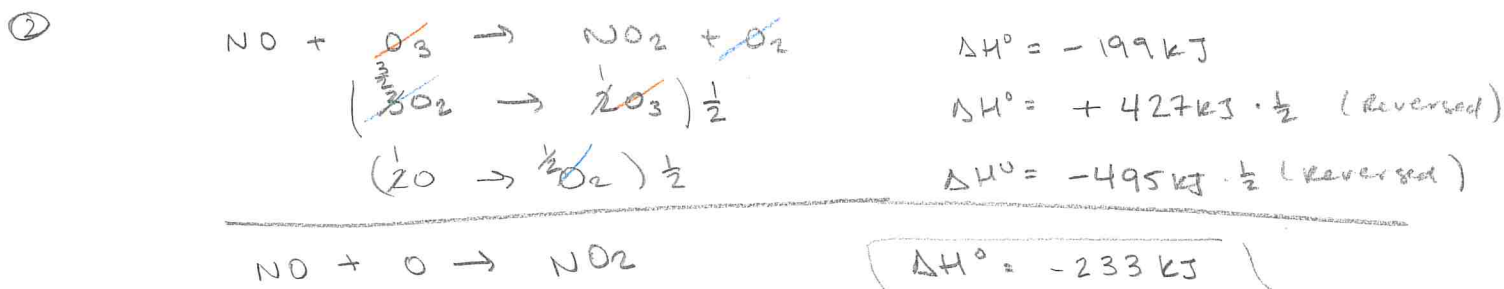


WKST 6C - Hess's Law

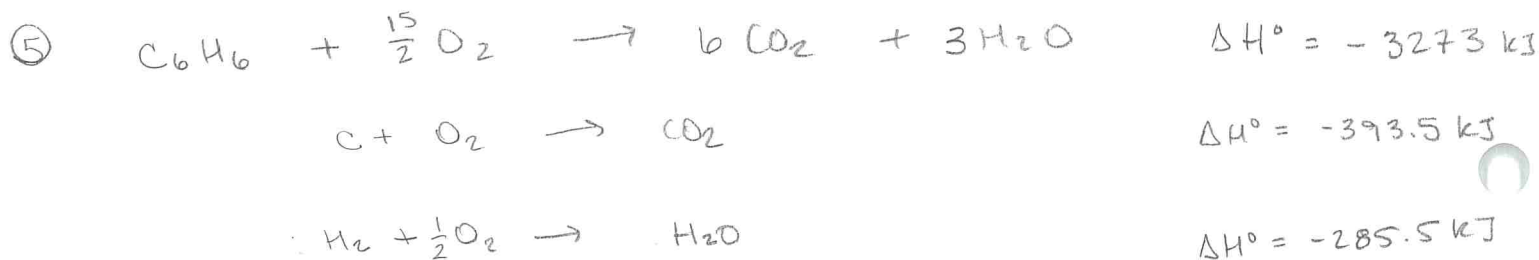


$$\Delta H_{\text{rxn}}^{\circ} = \sum H_f^{\circ} \text{ products} - \sum H_f^{\circ} \text{ reactants}$$

$$= [4(91) + 6(-286)] - [4(-45.5)] = \boxed{-1170 \text{ kJ}}$$



b) yes, as long as other reactions take place at standard conditions
1 mole product formed



form C_6H_6 from ${}^6\text{C}, {}^3\text{H}_2$



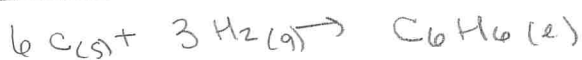
$$\Delta H^\circ = -285.5 \text{ kJ} \cdot 3$$



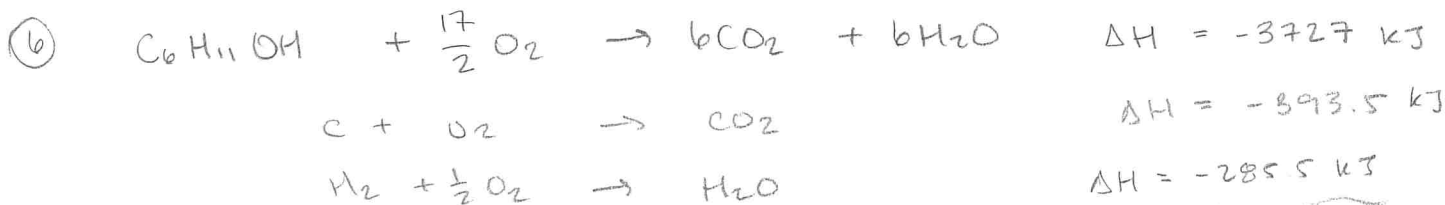
$$\Delta H^\circ = -393.5 \text{ kJ} \cdot 6$$



$$\Delta H^\circ = +3273 \text{ kJ (reverse)}$$



$$\Delta H_f^\circ = +56 \text{ kJ/mol}$$



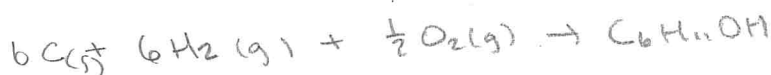
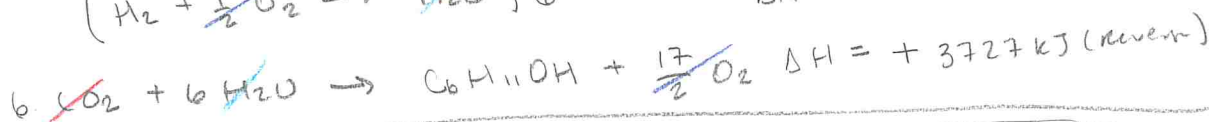
form $\text{C}_6\text{H}_{11}\text{OH}$ from ${}^6\text{C}, {}^{12}\text{H}, {}^1\text{O}$



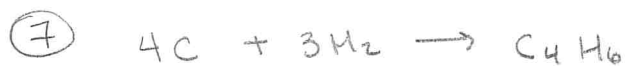
$$\Delta H = -393.5 \text{ kJ} \cdot 6$$



$$\Delta H = -285.5 \text{ kJ} \cdot 6$$



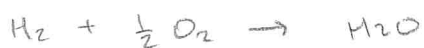
$$\Delta H = -347 \text{ kJ/mol}$$



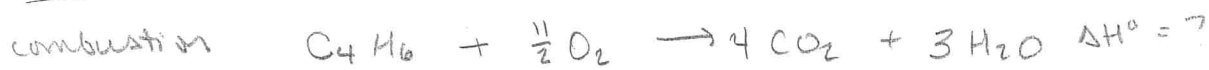
$$\Delta H_f^\circ = 112.0 \text{ kJ/mol}$$



$$\Delta H^\circ = -393.5 \text{ kJ/mol}$$



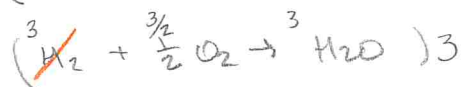
$$\Delta H^\circ = -285.5 \text{ kJ/mol}$$



$$\Delta H_c^\circ = -112.0 \text{ kJ/mol (reverse)}$$



$$\Delta H^\circ = (-393.5 \text{ kJ/mol}) \cdot 4$$



$$\Delta H^\circ = (-285.5 \text{ kJ/mol}) \cdot (3)$$



$$\Delta H^\circ = -2542.5 \text{ kJ/mol}$$



$$\Delta H^\circ = -2877 \text{ kJ/mol}$$



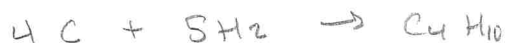
$$\Delta H^\circ = -393.5 \text{ kJ/mol} \cdot 4$$



$$\Delta H^\circ = -285.5 \text{ kJ/mol} \cdot 5$$



$$\Delta H^\circ = +2877 \text{ kJ/mol}$$



$$\Delta H^\circ = -125 \text{ kJ/mol}$$

-124.5

