November 18 in-class

1. $1C_{(s)} + 1O_{2(g)} \rightarrow 1CO_{2(g)}$
2. $1H_{2(g)} + \frac{1}{2}O_{2(g)} \rightarrow 1H_2O_{(g)}$
3. $6C_{(s)} + 6H_{2(g)} + 3O_{2(g)} \rightarrow 1C_6H_{12}O_{6(s)}$
4. $C_6H_{12}O_{6(s)} + 6O_{2(g)} \rightarrow 6CO_{2(g)} + 6H_2O_{(g)}$
5. $\Delta H_{rxn}^\circ = \Delta H_{combustion}$

$\Delta H_{rxn}^\circ = \sum n \cdot H_f(products) - \sum n \cdot H_f(reactants)$

$= ((6 \cdot -393.5) + (6 \cdot -242\,kJ/mol)) -$

$((1 \cdot 1273) + (6 \cdot (0)$

$\Delta H_{rxn} = -3869.8\ kJ/mol$

$= \Delta H_{combustion}$

6. $moles = \frac{10.0\,g}{180.16\,g/mol}$

$\approx 0.056\ mol$

$0.056\,mol \cdot -1273.3\ kJ/mol$

$\approx -70.7\ kJ$

7. $.35 \cdot -70.7$

$\approx -24.7\ kJ$