Ch. 6 Fix it Correct work

a) $q_{H_2O} = 100mL \cdot 4.18 J/g^{\circ}C \cdot (25.6 - 22.3)$

$q_{H_2O} = 1379.4$

$q_{rxn} = -1379.4 = -1.38kJ$

$-1.38kJ$

b) $\Delta H = \frac{q}{n} = \frac{}{0.0125mol} = -110. kJ/mol$

$.0500L \cdot 0.250M = 0.0125$ mol of each ion

c) $q_{H_2O} = 80 \cdot 4.18J \cdot (30.5 - 23.0)$

$q = 2508J$

$2508J \cdot \frac{1mol}{110,000J} = 0.0228mol$

$\frac{.02280mol}{.0400L} = 0.570M$ solutions

2a) $C_4H_9OH + 6O_2 \rightarrow 4CO_2 + 5H_2O$

2b)

$4H_2 + 2O_2 \rightarrow 4H_2O$ $\quad 4 \cdot -240$

$4C + 4O_2 \rightarrow 4CO_2$ $\quad 4 \cdot -340$

$4CO_2 + 5H_2O \rightarrow C_4H_9OH + 6O_2$ $\quad -(-2670)$

$4H_2 + 4C + H_2O \rightarrow C_4H_9OH$ $\quad \Delta H = -50\ kJ/mol$

2c) $5.0\ g\ C_4H_9OH \cdot \frac{1\ mol}{74.12\ g} \cdot \frac{2670\ kJ}{1\ mol} = 180\ kJ$

2d) $180\ kJ$

$180 \cdot 10^3 = 1500\ g \cdot 4.18 \cdot \Delta T$

$\Delta T = 28.7\ ^\circ C$