5 Enthalpy changes – Part 2 — Answers

Answers

Work through these after trying the questions yourself.

5.1 $q = mc\,\Delta T$.
5.2 $\Delta H = -q/n = -5000/0.10 = -50000$ J mol^{-1} $= -50$ kJ mol^{-1}.
5.3 $q = mc\,\Delta T = 200 \times 4.18 \times 10 = 8360$ J (≈ 8.36 kJ).
5.4 The total enthalpy change of a reaction is the same whatever route is taken from reactants to products.
5.5 It lets you find an enthalpy change that cannot be measured directly (from values that can).

5.6 $q = mc\,\Delta T = 200 \times 4.18 \times 20 = 16720$ J; $n = 0.32/16 = 0.020$ mol; $\Delta H = -q/n = -16720/0.020 = -8.36 \times 10^5$ J mol^{-1} $= -836$ kJ mol^{-1}.