

Solutions

Each answer shows the steps, then the **result**.

2.1

- q heat, m mass, c specific heat, ΔT temperature change

2.2

- $q = (100)(4.18)(5.0) = 2090 \text{ J}$

2.3

- Exothermic (it released heat to the water)

3.1 B

- $T_{\text{final}} - T_{\text{initial}}$

3.2

(a)

- $q = (200)(4.18)(6.0) = 5016 \text{ J} \approx 5.0 \text{ kJ}$

(b)

- $q_{\text{reaction}} = -5.0 \text{ kJ}$ (exothermic)

3.3

- $q_{\text{water}} = (100)(4.18)(10.0) = 4180 \text{ J}$; heat released = 4180 J for 0.50 g; per gram
= $4180/0.50 = 8360 \text{ J/g}$