

College Prep Chemistry of the Earth System

Assignment 2H

20 Points

Specific Heat Calculations

Part 1

Solve the following specific heat problems

1. $q = 934.5\text{J}$, $m = 42.5\text{g}$
 $\Delta T = 29.2^\circ\text{C}$, $c = \underline{\hspace{1cm}}\text{J/g}^\circ\text{C}$
2. $q = 254.9\text{J}$, $m = 28.8\text{g}$
 $\Delta T = 15.0^\circ\text{C}$, $c = \underline{\hspace{1cm}}\text{J/g}^\circ\text{C}$
3. $q = 1943.5\text{J}$, $c = 0.482\text{J/g}^\circ\text{C}$
 $\Delta T = 35.2^\circ\text{C}$, $m = \underline{\hspace{1cm}}\text{g}$
4. $q = 835.8\text{J}$, $c = 0.284\text{J/g}^\circ\text{C}$
 $\Delta T = 21.6^\circ\text{C}$, $m = \underline{\hspace{1cm}}\text{g}$
5. $q = 913.5\text{J}$, $c = 0.834\text{J/g}^\circ\text{C}$
 $m = 29.4\text{g}$, $\Delta T = \underline{\hspace{1cm}}^\circ\text{C}$
6. $q = 2184.2\text{J}$, $c = 0.184\text{J/g}^\circ\text{C}$
 $m = 19.3\text{g}$, $\Delta T = \underline{\hspace{1cm}}^\circ\text{C}$

Part 2

Solve the following problems for ΔT , and find either T_{final} or T_{ini}

7. $q = 492.5\text{J}$, $c = 0.502\text{J/g}^\circ\text{C}$
 $m = 89.4\text{g}$, $\Delta T = \underline{\hspace{1cm}}^\circ\text{C}$
 $T_{\text{final}} = 56.7^\circ\text{C}$, $T_{\text{ini}} = \underline{\hspace{1cm}}^\circ\text{C}$
8. $q = -526.5\text{J}$, $c = 0.235\text{J/g}^\circ\text{C}$
 $m = 82.7\text{g}$, $\Delta T = \underline{\hspace{1cm}}^\circ\text{C}$
 $T_{\text{final}} = 30.2^\circ\text{C}$, $T_{\text{ini}} = \underline{\hspace{1cm}}^\circ\text{C}$
9. $q = 922.3\text{J}$, $c = 0.231\text{J/g}^\circ\text{C}$
 $m = 66.7\text{g}$, $\Delta T = \underline{\hspace{1cm}}^\circ\text{C}$
 $T_{\text{final}} = \underline{\hspace{1cm}}^\circ\text{C}$, $T_{\text{ini}} = 83.6^\circ\text{C}$
10. $q = -89.8\text{J}$, $c = 0.304\text{J/g}^\circ\text{C}$
 $m = 117.3\text{g}$, $\Delta T = \underline{\hspace{1cm}}^\circ\text{C}$
 $T_{\text{final}} = \underline{\hspace{1cm}}^\circ\text{C}$, $T_{\text{ini}} = 29.9^\circ\text{C}$