

Honors Chemistry Worksheet: Heat Calculations

Answer Key

- 1.) 107 kJ
- 2.) $C_p = 1.98 \text{ J/g}\cdot^\circ\text{C}$ ~ Acetic Acid
- 3.) 18600 J
- 4.) 180 000 J = $1.8 \times 10^5 \text{ J}$
- 5.) 268 g
- 6.) $\Delta T = 11^\circ\text{C}$, $T_2 = 7.0^\circ\text{C} + 11^\circ\text{C} = 18^\circ\text{C}$
- 7.) $\Delta T \text{ K} = \Delta T^\circ\text{C}$, 59 670 J
- 8.) $2.31 \text{ J/g}\cdot^\circ\text{C}$
- 9.) Volume Sn roof = 6.7 ft^3 $-(\text{in}^3 - \text{ft}^3 - \text{cm}^3 - \text{density}) = 1.4 \times 10^6 \text{ g Sn}$, $4.6 \times 10^7 \text{ J} = 4.6 \times 10^3 \text{ kJ}$
- 10.) Each temperature must be converted to $^\circ\text{C}$ then $\Delta T = 19^\circ\text{C}$, 1200J
- 11.) $M = 3600 \text{ g}$ convert with D to volume = 180 cm^3
- 12.) Releases heat, temp decreases. $\Delta T = 121^\circ\text{C}$, $T_2 = 109^\circ\text{C}$
- 13.) (4.18 J = 1calorie) a.) 29.7 kJ, b.) 8.63 kJ/g c.) 0.2100 calorie d.) 2.1 Calorie
- 14.) calorimetry equation; $C_p = 0.10 \text{ J/g}\cdot^\circ\text{C}$
- 15.) calorimetry equation; $C_p = 0.42 \text{ J/g}\cdot^\circ\text{C}$
- 16.) 18.0°C