

Extra Practice Problems

1. Gold has a specific heat of $0.129 \text{ J/g} \cdot ^\circ\text{C}$. How many joules heat energy are required to raise the temperature of 15 grams of gold from 22°C to 85°C ?
2. An unknown substance with a mass of 100. Grams absorbs 1000. J while undergoing a temperature increase of 15°C . What is the specific heat of the substance?
3. If the temperature of 34.4 g of ethanol increases from 25°C to 78.8°C , how much heat has been absorbed by the ethanol?
4. Graphite has a specific heat of $0.709 \text{ J/g} \cdot ^\circ\text{C}$. If a 25.0 gram piece of graphite is cooled from 35.0°C to 18.0°C , how much energy was lost by the graphite?
5. Copper has a specific heat of $0.385 \text{ J/g} \cdot ^\circ\text{C}$. A piece of copper absorbs 5000 J of energy and undergoes a temperature change from 100°C to 200°C . What is the mass of the piece of copper?
6. 45 grams of an unknown substance undergoes a temperature increase of 38°C after absorbing 4172.4 Joules. What is the specific heat of the substance?
7. A 40 g sample of water absorbs 500 Joules of energy. How much did the water temperature change?
8. If 335 g of water at 65.5°C loses 9750 J of heat, What is the final temperature of the water?

Answer Key- Extra Practice Problems

1. $q = 120 \text{ J}$
2. $s = 0.7 \text{ J/g}^\circ\text{C}$
3. $q = 4500 \text{ J}$
4. $q = 301 \text{ J}$
5. $m = 100\text{g}$
6. $s = 2.4 \text{ J/g}^\circ\text{C}$
7. Temp Change = 3°C
8. Final Temp = -65.5°C