

General Chemistry
Mr. MacGillivray
Quiz #6:
Temperature, Heat, and Specific Heat

Possibly Useful Information

$$Q = mC\Delta T$$

$$^{\circ}\text{C} = \text{K} - 273$$

$$\text{Spec. heat of Fe} = 0.45 \text{ J/g}^{\circ}\text{C}$$

$$4.18 \text{ J} = 1 \text{ cal}$$

$$\text{Spec. heat of H}_2\text{O} = 4.18 \text{ J/g}^{\circ}\text{C}$$

1. Would it require more heat to increase the temperature of 10.0 g of water by 10 degrees C or would it require more heat to raise the temperature of 10.0 g of iron by 10 degrees C?

Why?

2. A 10.0 g sample of lead was heated from 250 K to 315 K. If the specific heat of lead is 0.129 J/gK, how much heat was absorbed by the lead? Show all work.

Perform the following conversions. No work needs to be shown.

3. $500^{\circ}\text{C} = \underline{\hspace{2cm}} \text{K}$
4. $500 \text{ K} = \underline{\hspace{2cm}}^{\circ}\text{C}$

Perform the following conversions. Show all work.

5. $232.4 \text{ kcal} = \underline{\hspace{2cm}} \text{ J}$
6. $232.4 \text{ kJ} = \underline{\hspace{2cm}} \text{ cal}$