

CALCULATIONS FOR TEMPERATURE AND PHASE CHANGE:

NAME, DATE, SECTION

Show all work. Answer in correct significant figures.

1. How much energy is required to melt 100.0 grams of ice? (7970 cal)
2. How much energy is required to vaporize 234.5 g of water? (1.3×10^5 cal)
3. If 30.6 calories are required to vaporize 25g of a substance, what is the heat of vaporization of that substance? (1.2 cal/g)
4. How much energy is removed from 500.0 g of water when the temperature is lowered by 1.10°C? (-2.30×10^3 J)
5. How much energy is required to raise the temperature of 1000.0 g of water from 23.00°C to 26.00°C? (1.26×10^4 J)
6. The heat capacity (specific heat) of copper is (0.0924 cal/g°C), how much energy is required to raise the temperature of 10.0g of copper by 100.0 °C? (92.4 cal)
7. If 25.6 J of energy raised 786g of a substance from 20.0°C to 35.0°C, what is the specific heat of the substance (S)? (2.17×10^{-3} J/g°C)