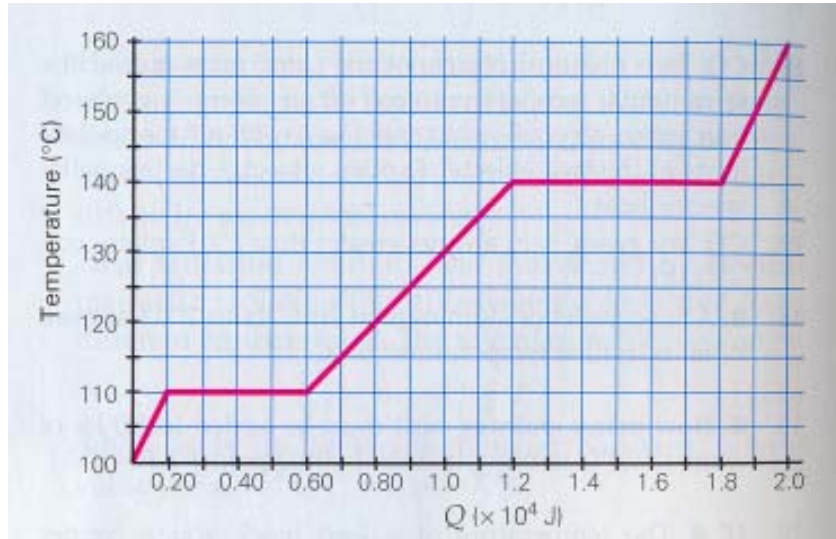


Physics 151 Class Exercise: Calorimetry II

1. A kilogram of a substance gives a T-versus-Q Graph as shown below.
- What are the melting and boiling points?
 - What are the specific heats of the substance during its various phases ?
 - What are the latent heats of the substance at the various phase changes?



Melting Point =

Boiling Point =

Specific Heat as Solid =

Specific Heat as Liquid =

Specific Heat as Gas =

Latent Heat of Fusion =

Latent Heat of Vaporization =

2. A 155-g aluminum cylinder is removed from a liquid nitrogen bath, where it has been cooled to $-196\text{ }^{\circ}\text{C}$. The cylinder is immediately placed in an insulated cup containing 80.0 g of water at $15.0\text{ }^{\circ}\text{C}$. What is the equilibrium temperature of this system? If your answer is $0\text{ }^{\circ}\text{C}$, determine the amount of water that has frozen. The average specific heat of aluminum over this temperature range is $653\text{ J}/(\text{kg}\cdot\text{K})$.

Answer:	
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