Chapter C10 Practice: Thermal Energy

Physics I

College of the Atlantic

1. Suppose you drop a 2 kg brick off a 50 m building. The brick hits the ground, bounces a few times, and comes to rest.

   (a) How much energy has the brick lost?

   (b) Where does this energy go?

   (c) Suppose this energy could be used to heat 250g of water. If the water started at 30 C, what would its temperature be after the brick's energy was added to it?

2. A 30g piece of iron is heated to 100C and then placed in a well-insulated container containing 200g of water at 20C. Heat will flow from the iron into the water until the water and iron are both the same temperature. What is that temperature? Start with this word equation:

$$\text{Energy Lost by Iron} = \text{Energy gained by water} . \tag{1}$$

   Make each ΔU term positive. Then solve for T_f.