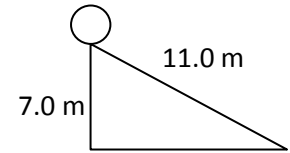


Worksheet 7.8: Thermal Energy, Heat and Specific Heat Capacity

1. How much heat is needed to rise the temperature of 462 g of water from 24.0 °C to 80.0 °C?

4. A 3.0 kg ball rolls down from the top of a ramp as shown. If the ball is moving at 10.0 m/s at the bottom, how much energy was lost due to friction (thermal energy)?



2. How much heat is required to raise the temperature of 462 g of copper from 24.0 °C to 80.0 °C?

5. A 1.00 g raindrop traveling at 40.0 m/s strikes the surface of 100 g of water in a glass. How much will the water's temperature change if we assume that:

i) all of the raindrop's kinetic energy is transformed into thermal energy, and

ii) the raindrop and the glass of water's temperatures are initially the same

3. A 0.240 kg chunk of carbon is heated to 215 °C and quickly placed into 0.275 kg of water that has a temperature of 12 °C. What will the final temperature of the water be?