Read example 8.1 page 205

Solve the following exercises.

6. A block of mass m = 5.00 kg is released from point Ⓐ and slides on the frictionless track shown in Figure P8.6. Determine (a) the block's speed at points Ⓑ and Ⓒ and (b) the net work done by the gravitational force on the block as it moves from point Ⓐ to point Ⓒ.
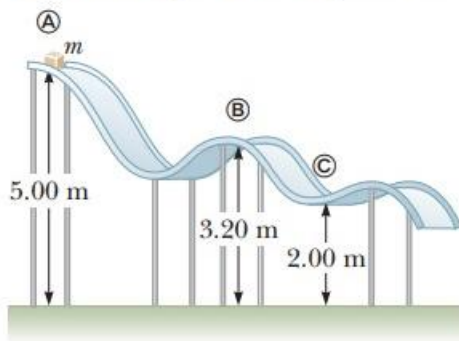
Figure P8.5

Figure P8.6

7. Two objects are connected by a light string passing over a light, frictionless pulley as shown in Figure P8.7. The object of mass m_1 = 5.00 kg is released from rest at a height h = 4.00 m above the table. Using the isolated system model, (a) determine the speed of the object of mass m_2 = 3.00 kg just as the 5.00-kg object hits the table and (b) find the maximum height above the table to which the 3.00-kg object rises.

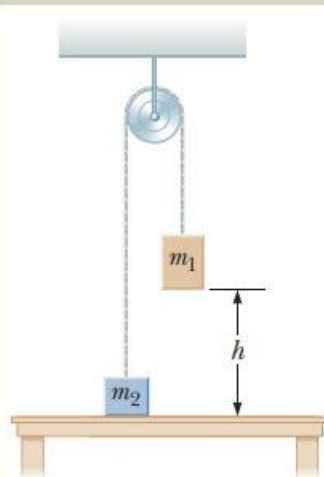**Figure P8.7**
Problems 7 and 8.

Solution

6)

a) $v_B = 5.94 \ m/s$, $v_C = 7.67 m/s$

b) $W_{A \to C} = 147J$

7)

a) $v = 4.43 \ m/s$

b) $h_{max} = 5.00m$