Minimum Height of Release

Solution:

The correct answer is e.)

We simply substitute the value of minimum kinetic energy required to complete the loop (found in Question 3) in the expression found in Question 1 (Conservation of Energy):

$$\cancel{m}g h_{min} = 2.5 \cancel{m}g (R - r)$$

$$\Rightarrow h_{min} = 2.5(R - r)$$