

22. We refer to the discussion in the textbook (see Sample Problem 10-2, which uses the same notation that we use here) for many of the important details in the reasoning. Here we only present the primary computational step (using SI units):

$$v = \frac{m + M}{m} \sqrt{2gh} = \frac{2.010}{0.010} \sqrt{2(9.8)(0.12)} = 3.1 \times 10^2 \text{ m/s} .$$