

$$v_f = \sqrt{\frac{kx_i^2}{m} - 2gh_f} = \sqrt{\frac{250.0 \text{ N/m}}{0.100 \text{ kg}}(0.0400 \text{ m})^2 - 2(9.80 \text{ m/s}^2)(0.180 \text{ m})}$$