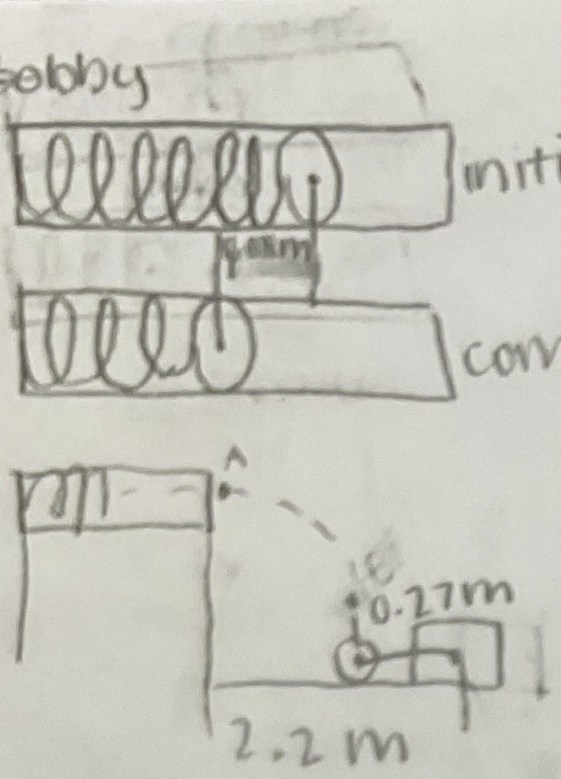
9. Bobby



Bobby: $K_i + U_i = K_A + U_A$

$mgh + \frac{1}{2}kx^2 = \frac{1}{2}mv_A^2 + mgh$

$kx^2 = mv_A^2$

$-v_A^2 = 2a\Delta x$

$v_A^2 = 2a\Delta x$

$kx^2 = m2a\Delta x$

$k = \frac{m2a\Delta x}{x^2}$

$k = \frac{2(-10)(2.2-.27)m}{0.011^2}$

$k = -319008\,m$

Rhonda: $K_i + U_i = K_A + U_A$

$mgh + \frac{1}{2}kx^2 = \frac{1}{2}mv_A^2 + mgh$

$kx^2 = mv_A^2$

$kx^2 = m2a\Delta x$

$x^2 = \frac{m2a\Delta x}{k}$

$x = \sqrt{\frac{m2a\Delta x}{k}}$

$x = \sqrt{\frac{2(-10)(2.2)m}{-319008m}}$

$\boxed{x = 0.0117\,m = 1.17\,cm}$