Matthew Hansell - SW1

$x_f = 2.2$ $x_i = 1.93$ m

$x_{f_2} = ?$ $x_{c_i} = 0.011$ m

$KE = \frac{mv^2}{2}$

$U = \frac{1}{2}kx^2$

$x = v_i t + \frac{1}{2}at^2$

$v_f = v_i + at$

$v_f^2 = v_i^2 + 2ax$

$KE_i + U_i = KE_f + U_f$ $\quad v_i = \frac{x}{t}$

$0 + \frac{1}{2}k x_{ci}^2 = \frac{mv_f^2}{2}$

$v = \sqrt{\frac{kx_{ci}^2}{m}}$

t is the universal value

$x = v_i t + \frac{1}{2}at^2 = \frac{1}{2}at^2$ $\quad t = \sqrt{\frac{x}{\frac{1}{2}a}}$

$v_{fy}^2 = 2 \cdot 10 \cdot y$

$y = \frac{v_{fy}^2}{20}$