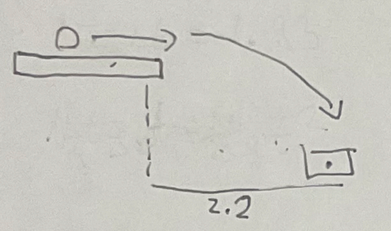
SW#1

2.2 - 0.27 = 1.93m that



$\frac{1}{2}kx^2$ = initial energy

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

$kx^2 = mv^2$

$k = \frac{mv^2}{x^2}$

$v \cdot t = 1.93m$

$v = \frac{1.93}{t}$

if $x = 0.011$ then $d = 1.93$

① $\frac{1}{2}kx^2 = \frac{1}{2}mv^2$

$kx^2 = mv^2$

$v = \sqrt{\frac{k}{m}x^2}$

$v \cdot t = d$

$v \cdot t = \sqrt{\frac{k}{m}x^2} \times t$

$d = \sqrt{\frac{k}{m}x^2} \times t$

$d = \sqrt{\frac{k}{m}x^2} \times \sqrt{2hg}$

if $m = 1kg$ and $h = 1m$

$1.93 = \sqrt{\frac{k}{1}(.011)^2} \times \sqrt{2(1)(9.8)}$

$k =$ then $k \approx 1576.63$

$\frac{1}{2}gt^2 = h$

$t = \sqrt{2h_g}$

let $m = 1kg$ and $h = 1m$

set $d = 2.2$

$2.2 = \sqrt{\frac{1576}{1}(x)^2} \times \sqrt{2(1)(9.8)}$

$x = 0.0125m$ or $1.25cm$

② or use ratio:

if $\Delta x = 0.011$ and $d = 1.93$

$\left(\frac{0.011}{1.93}\right)(2.2) = 0.0125m$