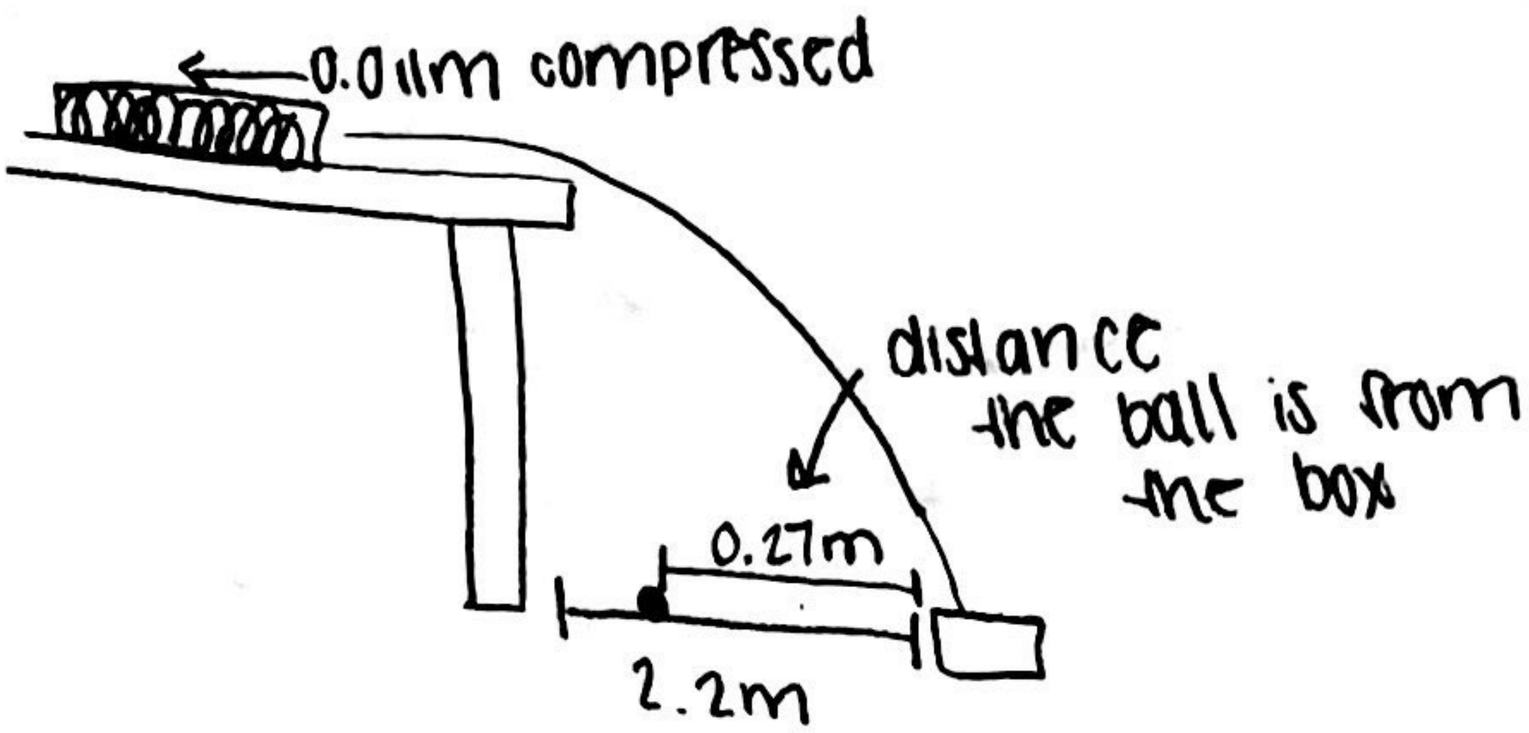
Question 9

d = 2.2m no friction



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

$PE = U_s = \frac{1}{2}kx^2$

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

$mv^2 = kx^2$

$(0.27)v^2 = (0.011)(2.2)^2$

$(0.27)v^2 = 0.053$

$\sqrt{v^2} = \sqrt{0.197}$

$v = 0.444\ m/s$

$1.93 + 0.444 = 2.374$

$\frac{1}{3}(0.011m) = 0.003666 + 0.011 =$ **0.014 m compressed**