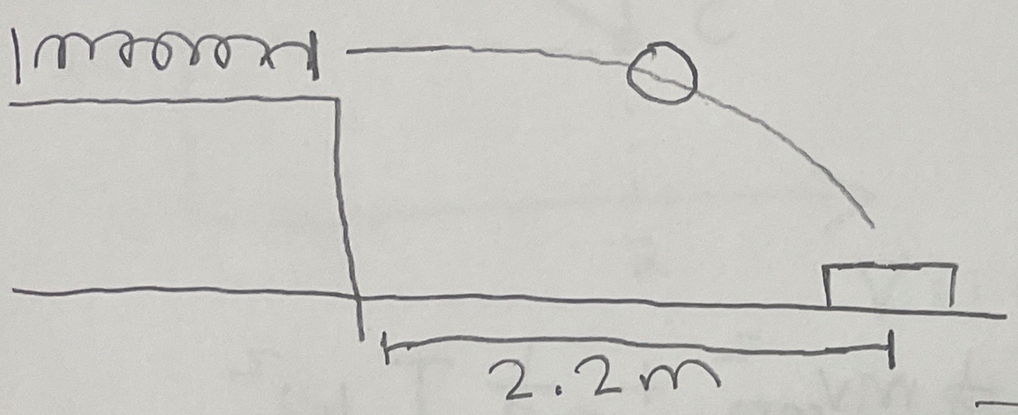
Caden Wyenandt

Question 9: Given: Bobby $\Delta x = .011\ m$ $\Delta x = 1.93 m$ Rhoda $\Delta x = ?$ $\Delta x = 2.2\ m$




$g = 10\ m/s^2$

$\Delta y = ?$ $a_y = -10 m/s^2$ $V_{yi} = 0 m/s$

$V_{yf} = ?$

Not enough; need energy ✗

elastic energy: $PE = \frac{1}{2} k x^2$

unit: Joules

$W = F * d$

$KE = \frac{1}{2} m v^2$

Bobby $\frac{1}{2} k (.011)^2 = W$

$\frac{1}{2} k (.011)^2 = F(1.93) \Rightarrow F = \frac{k(.011)^2}{2(1.93)}$

Rhoda $\frac{1}{2} k (x)^2 = F(2.2)$

$\frac{1}{2} k (x)^2 = \frac{k(.011)^2}{2(1.93)} (2.2)$

$x = \sqrt{\frac{(.011)^2}{1.93} (2.2)}$

$x = .0117\ m$

Rhoda should compress the spring by .01174 meters.