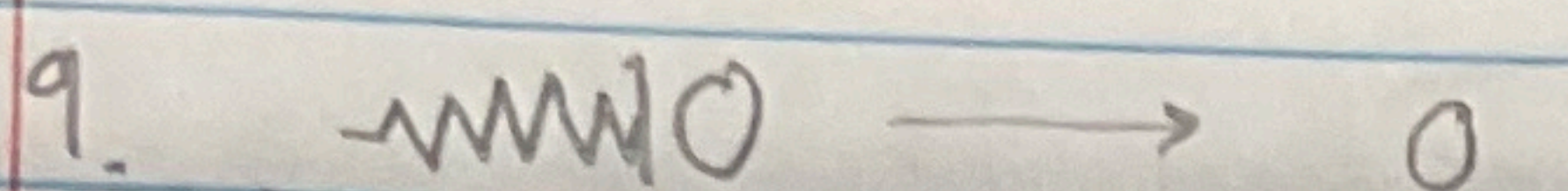


9. 

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

$$\frac{1}{2} kx^2 = \frac{1}{2} mv^2 \quad 3$$

2.2m

d = vt

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

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

$$\frac{2h}{g} = t^2$$

$$d = vt \quad \frac{d}{t} = v = \frac{2.2 - 2.7}{t} = v \quad \frac{1.93}{t} = v$$

$$\frac{1}{2} k (.011)^2 = \frac{1}{2} m \left(\frac{1.93}{t} \right)^2 = .0121 k = \frac{3.7249 \text{ m}}{t^2}$$

$$mgh = \frac{1}{2} mv^2 \quad mgh = \frac{1}{2} mv^2$$

$$= .0121 k = \frac{3.7249 \text{ m}}{2h}$$

$$h = \frac{1}{2} kx^2 \quad \frac{1}{2} kx^2 = mgh$$