

# Calculation of Velocity

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I am going to calculate the Velocity of my swing immediately after it is released from being pulled backwards.

I will start with the Potential Energy Formula

$$PE = MGH$$

$$PE = 0.3 \text{ kg} \times 9.8 \text{ m/s}^2 \times 0.055 \text{ m}$$

$$PE = 0.1617 \text{ kgm/s}$$

Then I will calculate the velocity using the Kinetic energy formula

$$KE = PE$$

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

$$0.1617 \text{ kgm/s} = \frac{1}{2} 0.055m (v)^2$$

$$0.1617 \text{ kgm/s} = 0.0275m (v)^2$$

$$0.1617\text{kgm/s} / 0.0275m = v^2$$

$$5.88 \text{ m/s}^2 = V^2$$

$$\mathbf{2.43 \text{ m/s} = v}$$