

AP Spring Homework 1

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- a) 3.0 m/s
- b) $T = 0.63 \text{ s}$
- c) $y = 0.098 \text{ m}$
- d) $y = 0.41 \text{ m}$
- e) $A = 0.31 \text{ m}$

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- a) $v_c = \sqrt{2gH}$
- b) $v_p = \frac{1}{2}\sqrt{2gH}$
- c) $T = 2\pi\sqrt{\frac{2D}{g}}$
- d) $x=2D$
- e) “Less than” with a correct justification

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- a) See LewTube for FBD
- b) Acceleration decreases with correct justification
- c) $\frac{dv}{dt} = g - \frac{b}{m}v^2$
- d) $v_t = \sqrt{\frac{mg}{b}}$
- e) $\Delta E = mg\left(h - \frac{m}{2b}\right)$