

Hw04a

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$$1. a) H = \frac{(v_0 \sin \theta)^2}{2g}$$

$$b) v_x = v_0 \cos \theta, v_y = 0$$

$$c) v_x = v_0 \cos \theta, v_y = -\frac{1}{2} \sqrt{2} v_0 \sin \theta$$

$$2. v_0 = \sqrt{\frac{gR}{2 \sin \theta \cos \theta}}, H = \frac{R}{4 \sin \theta \cos \theta}$$

$$3. y_D = y_B = H - \frac{1}{2} g \frac{D^2 + H^2}{v_0^2}$$

$$4. v = \sqrt{\frac{gH}{8}}$$