Hw04a

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

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

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

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

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

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