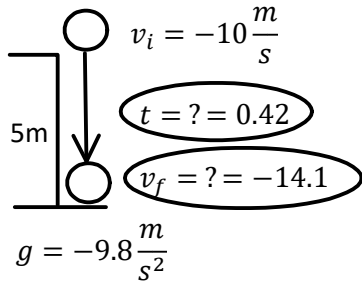
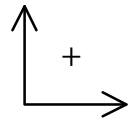


# P11 - 2.6 - Ball Thrown Down from Building Notes



$$v_f^2 = v_i^2 + 2ad$$

$$v_f^2 = (-10)^2 + 2(-9.8)(-5)$$

$$v_f^2 = 198$$

$$\Delta d = d_f - d_i$$

$$\Delta d = 0 - 5$$

$$\Delta d = -5m$$

$$v_f = -14.1 \frac{m}{s}$$

Velocity Before Impact =  $-14.1 \frac{m}{s}$

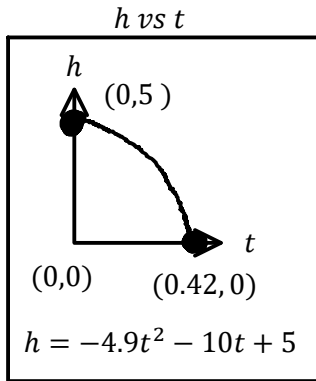
**Down**

$$v_f = v_i + at$$

$$-14.1 = -10 + (-9.8)t$$

$$t = 0.42s$$

**OR**



$$\Delta d = v_i t + \frac{1}{2} a t^2$$

$$-5 = (-10) \times t + \frac{1}{2} (-9.8) t^2$$

$$-5 = -10t - 4.9t^2$$

$$0 = -4.9t^2 - 10t + 5$$

$$t = -ve \quad t = 0.42s$$

Time to Fall = 0.42s  
**Quadform**

$$v_f = v_i + at$$

$$v_f = (-10) + (-9.8)(0.42)$$

$$v_f = -14.1 \frac{m}{s}$$

