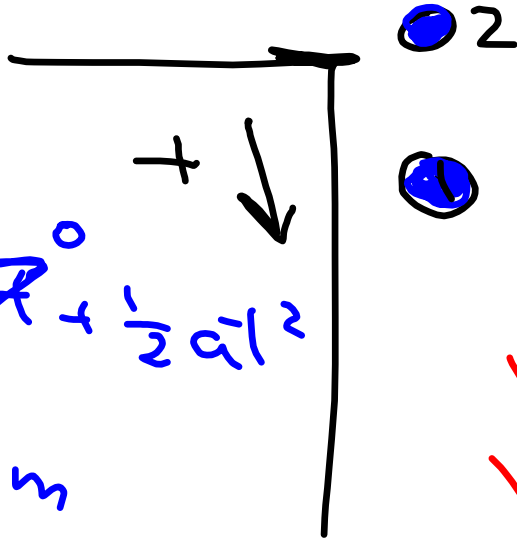


HRW 2
Q 13


$$d_1 = d_0 + v_0 t + \frac{1}{2} a t^2$$
$$= 4.9 \text{ m}$$
$$v = v_0 + at$$
$$v = 9.8 \text{ m/s}$$

Let clock start when $d_1 = 4.9 \text{ m}$

$$d_1 = 4.9 \text{ m} + 9.8 \text{ m/s} t + \frac{1}{2} g t^2$$

$$d_2 = \frac{1}{2} g t^2$$

$$d_1 - d_2 = 4.9 \text{ m} + 9.8 \text{ m/s} t$$

(31)

$$b) x(2) = 9(2) - .75(2)^3 = 12 \text{ cm}$$

$$x = 9t - .75t^3$$

$$a) v = 0$$

$$v = \frac{\Delta x}{\Delta t} = 9 - 2.25t^2 = 0$$

$$t = \sqrt{\frac{9}{2.25}} = 2 \text{ s}$$

$$a = \frac{\Delta v}{\Delta t} = -4.50t$$

$$c) a(2) = -4.50(2) = -9 \frac{\text{cm}}{\text{s}^2}$$

d) See parametric graph of position
going RIGHT

e) Left after $t = 2 \text{ s}$

$$f) 0 = 9t - .75t^3$$

$$0 = t(9 - .75t^2)$$

$$0 = t \quad \sqrt{\frac{9}{.75}} = t = 3.46 \text{ s}$$