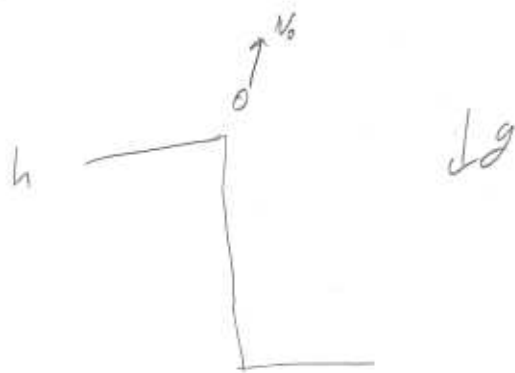


E-07.2-008



$$\text{I} \quad y_1(t) = -\frac{1}{2}gt^2 + v_0t + h$$

$$\text{II} \quad y_2(t) = -\frac{1}{2}g(t-t_0)^2 + h$$

$$t_0 = 2 \text{ sec}$$

$$v_0 = 13 \frac{\text{m}}{\text{sec}}$$

$$g = 9.8 \frac{\text{m}}{\text{sec}^2}$$

$$y_1(t_0) = y_2(t_0) = 0 \quad t_0 =$$

$$\text{I} \quad 0 = -\frac{1}{2}gt_1^2 + v_0t_1 + h$$

$$\text{II} \quad 0 = -\frac{1}{2}gt^2 + gtt_0 - \frac{1}{2}gt_0^2 + h$$

$$\text{I} - \text{II} \quad v_0t_1 - gtt_0 + \frac{1}{2}gt_0^2 = 0$$

$$t_1 = \frac{-\frac{1}{2}gt_0^2}{v_0 - gt_0} = 2.97 \text{ sec}$$

$$\text{I} \quad h = \frac{1}{2}gt_1^2 - v_0t_1 = 4.61 \text{ m}$$