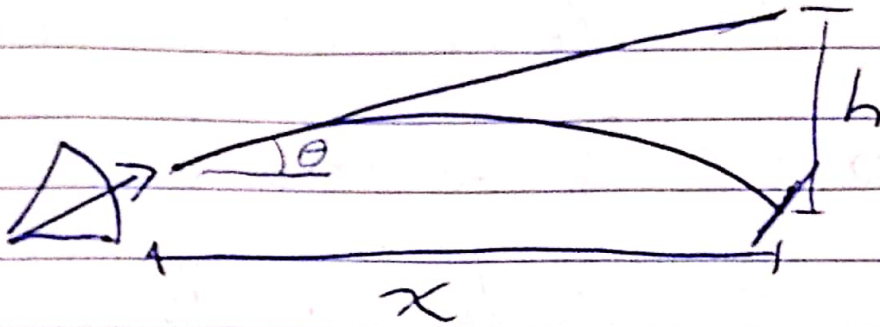


ZOP-KM-BK-18



$$V_{ox} = \cos(\theta) V_0$$

$$V_{oy} = \sin(\theta) V_0$$

$$x = V_{ox} t$$

$$t = x / V_{ox}$$

$$y = V_{oy} t - \frac{1}{2} g t^2 = 0 \quad \text{Same height}$$

$$t = 2 V_{oy} / g$$

$$2 V_{oy} / g = x / V_{ox}$$

$$2 V_{oy} V_{ox} = x g$$

$$2 \sin(\theta) \cos(\theta) = x g / V_0^2$$

$$\sin(2\theta) = x g / V_0^2$$

$$\theta = \frac{1}{2} \sin^{-1}(x g / V_0^2)$$

2 angles
 $0 < \theta < \pi/2$,
 we want
 lower

$$h = x \tan(\theta)$$