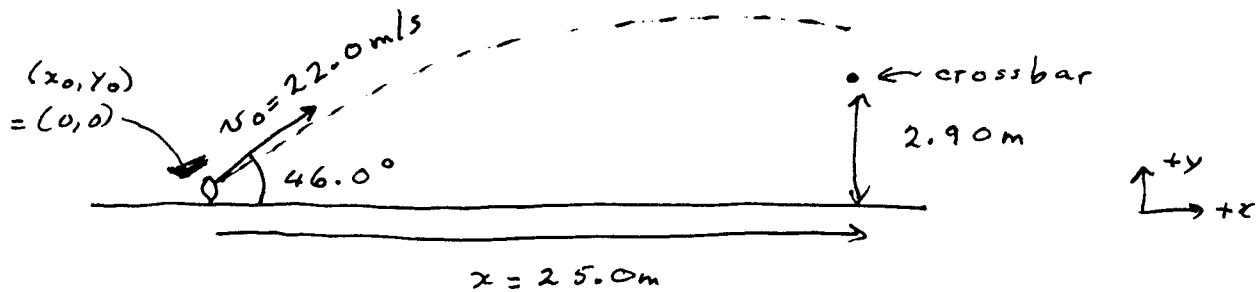


Problem 7-28



$$v_{0x} = 22.0 \cos 46.0^\circ = 15.28 \text{ m/s}$$

$$v_{0y} = 22.0 \sin 46.0^\circ = 15.83 \text{ m/s}$$

$$a_y = -9.80 \text{ m/s}^2$$

$$a_x = 0$$

$$x = x_0 + v_{0x}t$$

$$\therefore 25.0 = 0 + 15.28t$$

$$\Rightarrow t = 1.636 \text{ s}$$

$$y = y_0 + v_{0y}t + \frac{1}{2}a_y t^2$$

$$= 0 + (15.83)(1.636) - (4.90)(1.636)^2$$

$$= 12.78 \text{ m}$$

\therefore the ball is $(12.78 - 2.90) \text{ m} = 9.9 \text{ m}$ above
the crossbar