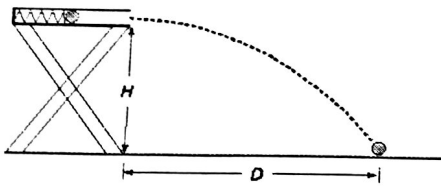A projectile is launched horizontally at an initial velocity v0 = 2.0 m/s. The launcher is at a height H = 1.5m above the ground.

$$v_{ox} = 2 \, m/s$$
$$v_{oy} = 0$$
$$a_x = 0$$
$$a_y = -10 \, m/s^2$$

1) How long does it take until it hits the ground?

$$y = H = y_o + v_{oy}t + \frac{1}{2}a_y t^2$$

$$\Rightarrow \quad -1.5 = \frac{-1}{2}(10)t^2$$

$$\Rightarrow \quad t^2 = \frac{2 \times 1.5}{10} \quad \Rightarrow \quad t = \sqrt{0.3} = 0.55s$$

2) Find the horizontal distance D traveled by the projectile.

$$X = X_o + v_{ox}t$$

$$\Rightarrow \quad X = 2 \times 0.55$$
$$= 1.1m$$