

Answer on Question #62296-Physics-Mechanics

A football is kicked at ground level in such a way that its initial horizontal speed is 12 m/s and its initial vertical speed is 17 m/s. Assume a level playing field and ignore air resistance.

(a) How much later does the football hit the ground?

(b) How far away does it land?

Solution

(a)

$$v_f - v_i = at$$

$$t = \frac{-17 - 17}{-9.8} = 3.5 \text{ s.}$$

(b)

$$x = 12(3.5) = 42 \text{ m.}$$