

A soccer ball is kicked horizontally off a 22.0-meter high hill and lands a distance of 35.0 meters from the edge of the hill.

Determine the initial horizontal velocity of the soccer ball.

Vertical displacement

use $\Delta y = \frac{1}{2} g t^2$

Horizontal displacement

= 22 m

To find the time

= 35 m

To find the initial velocity

use $\Delta x = v_{ix} \cdot t$

Solve