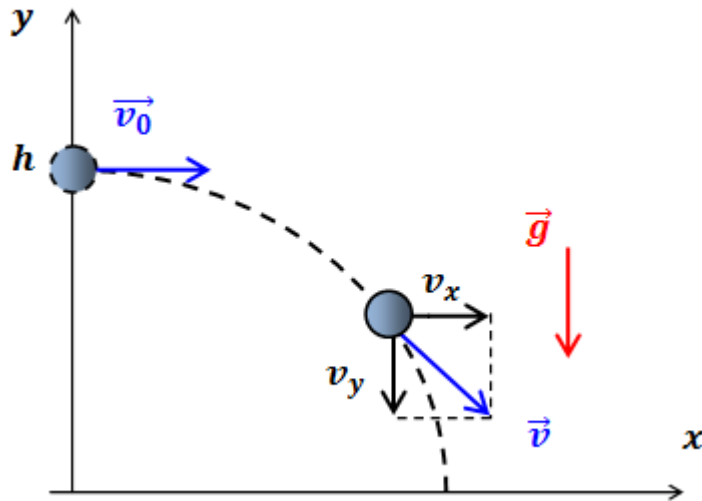


## Answer on Question #83095, Physics / Mechanics | Relativity

A stone is thrown horizontally at velocity 20m/s from the top of a building. What will be the velocity of stone after 3sec?

### Solution

The velocity of stone after 3 seconds will have two components: vertical and horizontal. The total velocity may be calculated using Pythagorean theorem.



X or horizontal component will be constant  $V_x = 20 \text{ m/s}$ .

Y or vertical component will be  $V_y = -gt$ , where  $g$  – acceleration of gravity ( $9.8 \text{ m/s}^2$ )

$$V_y = -9.8 \times 3 = -29.4 \text{ (m/s)}$$

$$V = \sqrt{20^2 + (-29.4)^2} = 35.56 \text{ (m/s)}$$

### Answer

**35.56 m/s** is the velocity of stone after 3 seconds.

Answer provided by <https://www.AssignmentExpert.com>