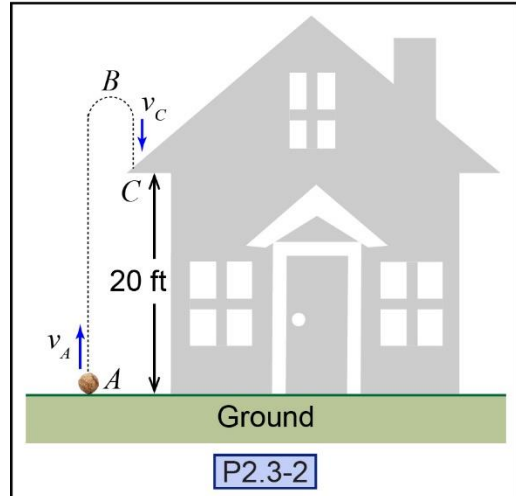


P2.3-2) A ball is thrown vertically upward from the ground next to a house with an initial speed of 45 ft/s. The height of the house is 20 feet. Determine the maximum height the ball attains, the time it takes for the ball to land in the house's gutter and the impact velocity of the ball as it hits the gutter. Neglect air resistance.

Given:

Find:



Solution:

Is the acceleration of the ball constant or non-constant and what is its value?

Assume that up is defined as positive.

Constant Non-Constant

$a =$ _____

What is the ball's velocity when the ball is at position B?

$v_B =$ _____

Calculate the maximum height that the ball reaches.

$h_B =$ _____

Calculate the total travel time of the ball.

$t_C =$ _____

Calculate the final velocity of the ball.

$v_C =$ _____