Answer on Question#38840, Physics, Mechanics

A car decelerates uniformly at 3 m/s2 while coming to a complete halt in 7 meters. The speed of the car at the start of the deceleration is ____ m/s.

Solution:
This equation relates final velocity, original velocity, constant acceleration, and displacement:
$2ad = v_f^2 - v_0^2$

$a = 3$ m/s^2;
$d = 7$ m;
$v_f = 0$ m/s.
The speed of the car at the start of the deceleration is
$v_0 = \sqrt{2ad}$
$v_0 = \sqrt{2 \cdot 3 \cdot 7} = \sqrt{42} = 6.48 \approx 6.5$ m/s.

Answer. 6.5 m/s.