## Answer on Question #51494, Physics, Mechanics | Kinematics | Dynamics

## **Question:**

A bullet it shot vertically into the air with an initial velocity of 109.8 m/s. Calculate the time (in seconds) taken for the bullet to reach its maximum height.

Take gravitational acceleration to be 9.81 m/s2.

## **Answer:**

A bullet will reach maximum height when v = 0:

$$v = v_0 - gt = 0$$

where  $v_0$  is initial velocity, g is gravitational acceleration, t is time.

$$t = \frac{v_0}{g} = \frac{109.8\frac{m}{s}}{9.81\frac{m}{s^2}} = 11.19 \, s$$

Answer: 11.19 s

## http://www.AssignmentExpert.com/