

The of a line is found by dividing the rise by the run.

46. Question Details

1 D Kinematics [589065]

You throw a ball straight up with an initial speed of 29.4 m/s.

- What is the maximum height the ball will reach?
 m
- How long is the ball in the air before it reaches its maximum height?
 s

$v_f = 0$
 $29.4 \text{ m/s} = v_i$
 $g = -9.81 \text{ m/s}^2$
 $a = \frac{v_f - v_i}{\Delta t}$
 $-9.81 = \frac{0 - 29.4}{\Delta t}$

$v_i + v_f = v_{\text{avg}} = \frac{\Delta d}{\Delta t}$
 $14.7 = \frac{\Delta d}{2.9969}$
 $\Delta t = \frac{-29.4}{-9.81} = 2.9969 \text{ s}$

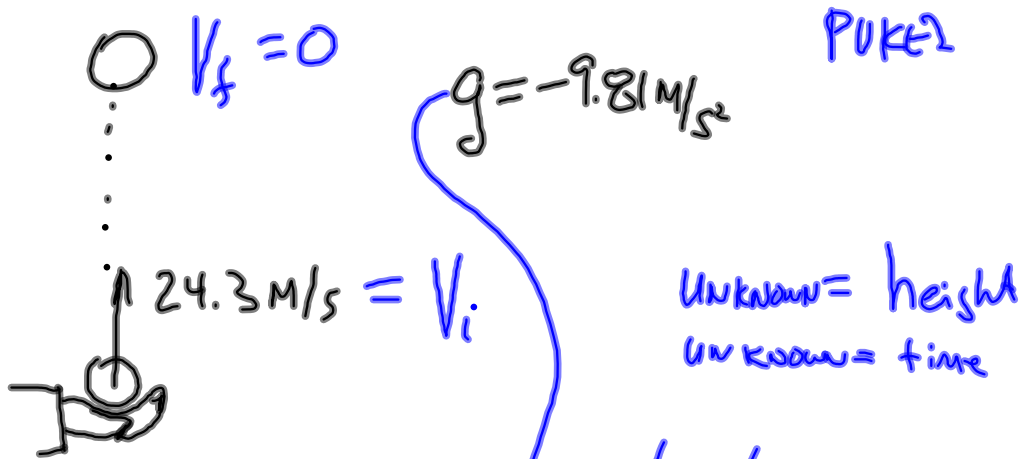
47. Question Details

Acoustics D01-05 [68062]

We use SI units for our measurements in this class. The fundamental unit of length is the meter, but many of our measurements will be in millimeters, centimeters or kilometers. This is a numerical question so express your answer in digits rather than in words- so 1,000,000 should be used instead of "one million". (use decimal fractions such as .03 to express values smaller than 1.)

In one meter there are millimeters,

$\Delta d = (14.7)(2.9969) = 44.05$



F = ma

$$\frac{\Delta v}{\Delta t} = a = \frac{v_f - v_i}{\Delta t}$$

$$\frac{-9.81 = 0 - 24.3}{\Delta t}$$

$$\Delta t = ? \quad ??$$

$$= \cancel{2.375} \text{ s}$$

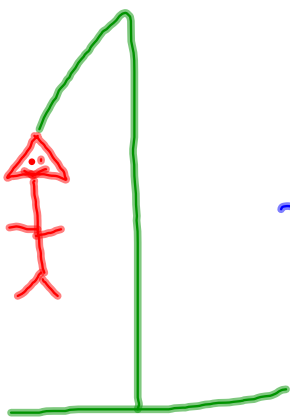
$$(\Delta t) - 9.81 = \frac{-24.3}{\Delta t}$$

$$\Delta t \frac{(-9.81)}{-9.81} = \frac{-24.3}{-9.81} = 2.47 \text{ s}$$

$$\Delta t = 2.47 \text{ s} \quad d = v_m \Delta t = 30.02 \text{ m}$$

$$v_{\text{avg}} = \frac{v_f + v_i}{2} = \frac{0 + 24.3}{2} = 12.15 \text{ m/s}$$

m o m e n t u m



Q S I X R
Z K Y W A
B

