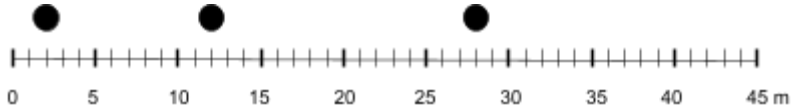
Kinematics



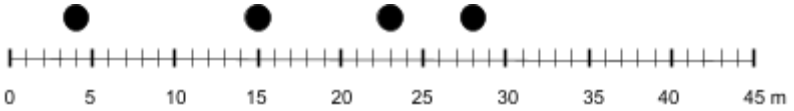
A ball moves to the right and is accelerating at a constant rate..
Its position is shown at 0, 2 and 4 seconds..

a. What is the first position of the ball?

b. What is the second position of the ball?

c. What is the third position of the ball?

d. What is the position of the ball at 6 seconds?



A ball moves to the right and is accelerating at a constant rate.. Its position is shown at 0, 5, 10 and 15 seconds.

a. What is the position of the ball at 20 seconds?

b. What is the average velocity of the ball between 0 and 10 seconds?

$$average\ velocity\ = \frac{distance}{time}$$

c. What is the instantaneous velocity of the ball at 5 seconds?

d. What is the average velocity at 10 seconds?

e. What is the instantaneous velocity of the ball at 10 seconds?

f. What is the acceleration of the ball?

$$acceleration\ = \frac{\Delta v}{\Delta t}$$

g. When does the ball stop moving?

A ball falls from the top of a 3 story building. Each floor is 3.5 m high. The ball accelerates at -9.8 m/ec^2.

a. After 1 second, what is the velocity of the ball?

$$acceleration = \frac{\Delta v}{\Delta t}$$

b. What is the average velocity of the ball between 0 and 1 second?

$$average\ velocity = \frac{VI + VF}{2}$$

c. After 1 second, how far has the ball fallen?

$$average\ velocity = \frac{\Delta x}{\Delta t}$$

d. What is the height of the building?

e. When does the ball hit the ground?