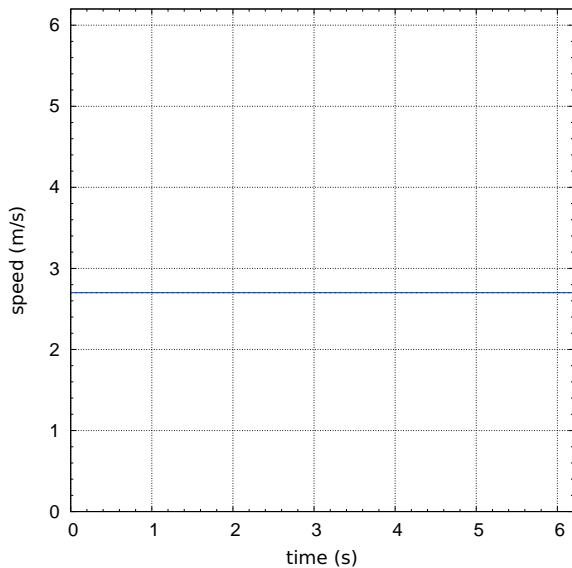


Due date: Wed May 16 08:00:00 pm 2018 (EDT)

The graph shows the speed of a car as a function of time.



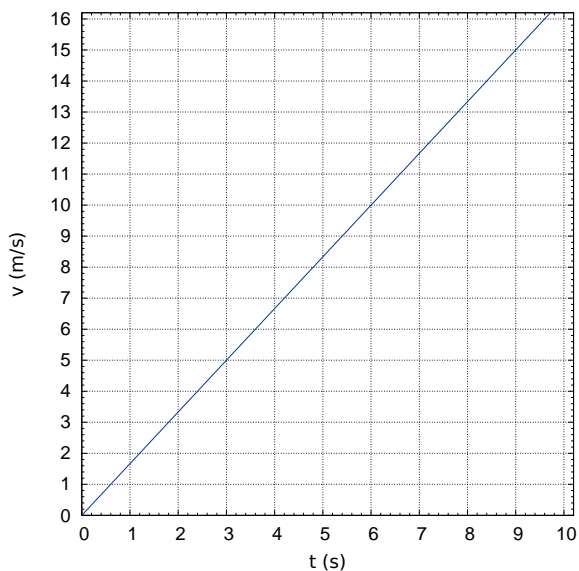
What is the speed of the car?

Tries 0/20

How much distance does the car cover between  $t_1 = 2.13$  s and  $t_2 = 5.75$  s?

Tries 0/20

The graph shows the speed of a car as a function of time.



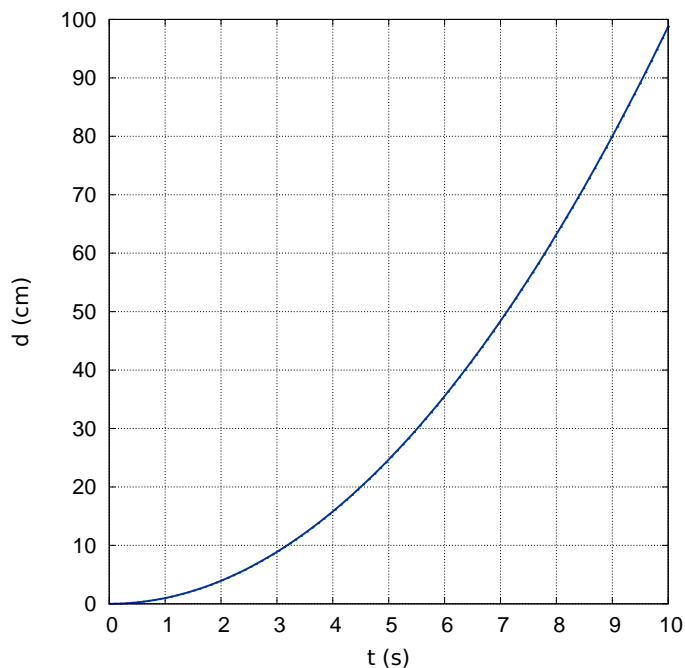
Initially the car is at rest. What is the acceleration of the car? Please, note that the graph goes through at least one grid intersection point.

Tries 0/20

How much distance does the car cover between  $t_1 = 2.17$  s and  $t_2 = 4.97$  s?

Tries 0/20

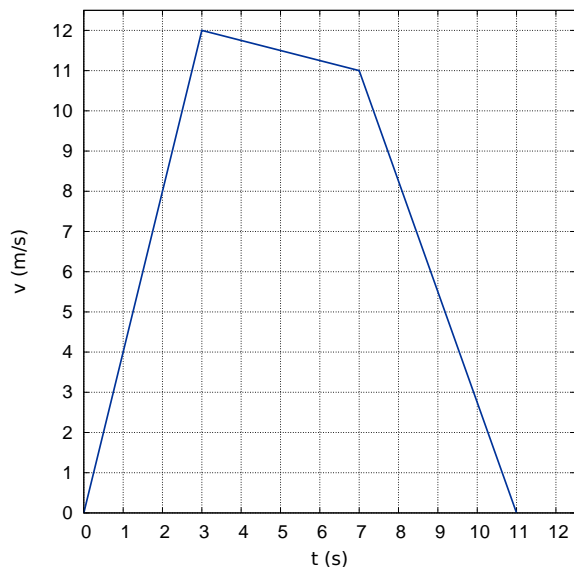
A small marble is rolling down on an incline. The marble was released from rest when the timer was started. The distance travelled by the marble as the function of time is shown in the figure.



What is the acceleration of the marble? Please, note that the curve passes through at least one grid intersection point.

Tries 0/20

A car is waiting at an intersection. When the traffic light turns green, the car starts moving. After some time the car comes to rest at another traffic light. The figure below shows the velocity of the car as a function of time.



One can clearly identify three different stages of this motion.

What is the acceleration of the car in the first stage?

Tries 0/20

What is the acceleration of the car in the third stage?

Tries 0/20

What is the total distance travelled by the car between the two traffic lights?

Tries 0/20

The average speed of a Greyhound bus from Lansing to Detroit is 111.5 km/h. On the return trip from Detroit to Lansing the average speed is 50.2 km/h on the same road due to heavy traffic. What is the average speed of the bus for the round trip?

Tries 0/20

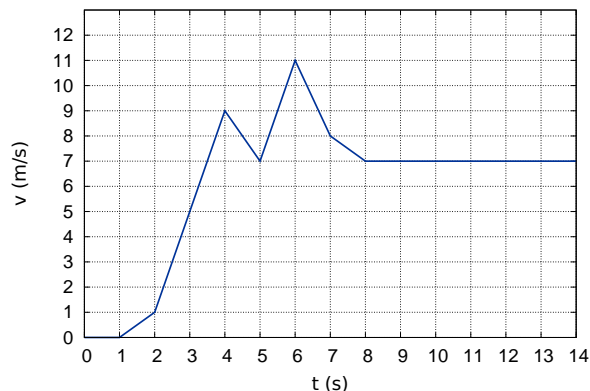
What is the **arithmetic** mean of the two speeds above?

Tries 0/20

What is the **harmonic** mean of the two speeds above?

Tries 0/20

A car is initially at rest on a straight road. The graph shows the speed of the car as a function of time.



What is the speed of the car at  $t=7$  s?

Tries 0/20

How much distance did the car cover in the first 8 seconds?

Tries 0/20

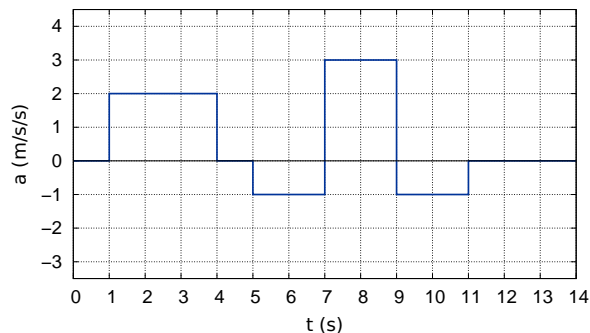
Determine the distance covered by the car between  $t=9$  s and  $t=12$  s?

Tries 0/20

What is the average speed of the car between  $t=4$  s and  $t=8$  s?

Tries 0/20

A car is initially at rest on a straight road. The graph shows the acceleration of the car along that road as a function of time.



What is the speed of the car at  $t=7$  s?

Tries 0/20

What distance does the car cover in the first 8 seconds?

Tries 0/20

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What is the speed of the car at  $t=12$  s?

Tries 0/20

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Determine the distance covered by the car between  $t=11$  s and  $t=14$  s?

Tries 0/20

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As an airplane is taking off at an airport its position is closely monitored by radar. The following three positions are measured with their corresponding times:

$$x_1 = 241.02 \text{ m at } t_1 = 4.40 \text{ s,}$$

$$x_2 = 286.18 \text{ m at } t_2 = 4.90 \text{ s,}$$

$$x_3 = 335.40 \text{ m at } t_3 = 5.40 \text{ s.}$$

What is the acceleration of the airplane at  $t_2 = 4.90$  s? (Assume that the acceleration of the airplane is constant.)

Tries 0/20

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The acceleration of a race car for the first few seconds of the race can be approximated by the  $a(t) = A + Bt$  linear formula, where  $t$  is the time measured in seconds and the values of the constants  $A$  and  $B$  are:  $A = 21.1 \text{ m/s}^2$  and  $B = -3.80 \text{ m/s}^3$ . What is the speed of the car 2.15 s after it starts from rest?

Tries 0/20

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How much distance does the car cover during this 2.15 s time period?

Tries 0/20