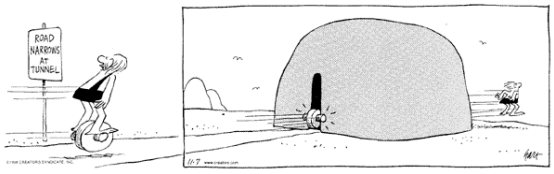
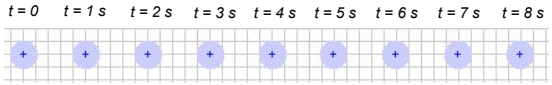
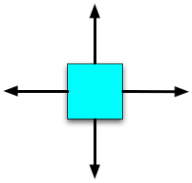
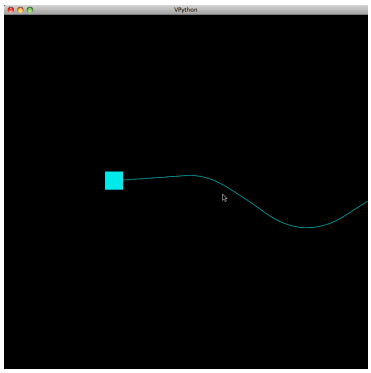


Uniform Motion

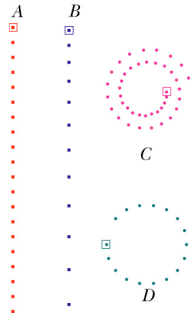


VPython Spaceship





Poll



Moving objects left the traces shown at left. The dots were laid down at equal time intervals. Which objects did NOT interact with another object somewhere?

1) A
2) B
3) C
4) D
5) A and D
6) A and B
7) A, B, and D

Poll

Which of the following can NOT be true for an object moving in a straight line at a constant speed?

1. Nothing is interacting with the object (it is in interstellar space, far from all other objects).
2. The object is experiencing a net interaction.
3. The object is experiencing multiple interactions, and these interactions add up to zero.
4. The object has no net interaction with the rest of the world.

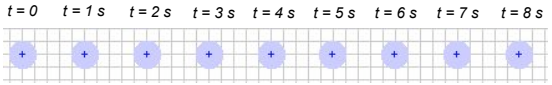
Poll

A bee flies in a straight line at constant speed. At 15 s after 9 AM, the bee's position is < 2, 4, 0> m. At 15.5 s after 9 AM, the bee's position is < 3, 3.5, 0> m.

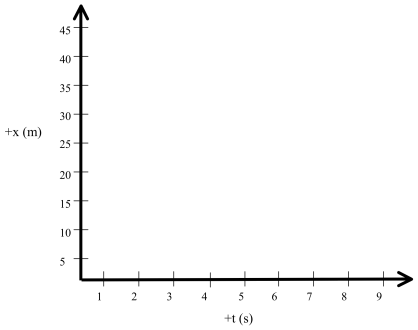
What is the average velocity of the bee?

1) < 6, 7, 0 > m/s
2) < .193, .225, 0 > m/s
3) 2.236 m/s
4) < 0.500, -0.250, 0 > m/s
5) < 2.000, -1.000, 0 > m/s

Uniform Motion



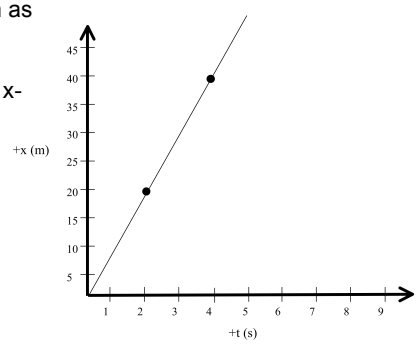
Graph x vs. t



Poll

A sprinter's x-position as a function of time is shown in the graph. What is the sprinter's x-velocity?

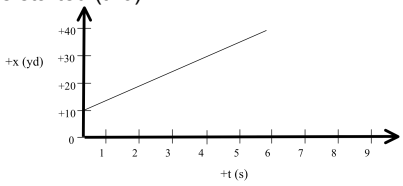
1. 40 m/s
2. 20 m/s
3. 10 m/s
4. 5 m/s
5. None of the above



Poll

A football player's x-position as a function of time is shown in the graph. If the goal line is defined to be x=0, what yard line was this football player at when the stopwatch was started (t=0)?

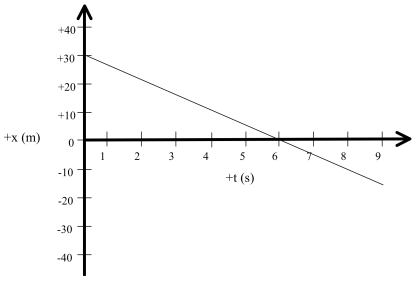
1. 40 yd line
2. 30 yd line
3. 10 yd line
4. zero (the goal line)
5. None of the above



Poll

A car moves according to the graph shown. If the +x direction is defined to be "to the right" (as has been our convention so far), in what direction is the car moving?

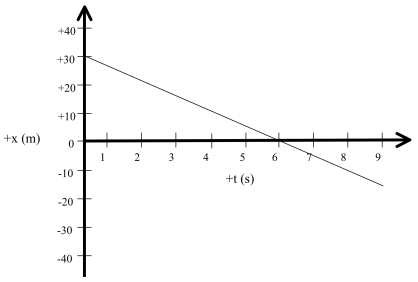
1. –x direction
2. +x direction
3. It's at rest.



Poll

What is the x-velocity of the car?

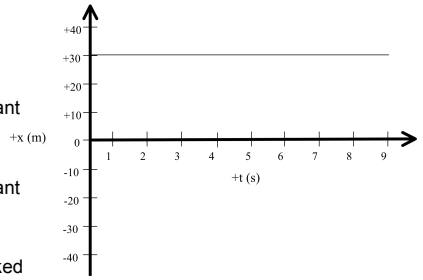
1. 30 m/s
2. –30 m/s
3. 6 m/s
4. 5 m/s
5. –5 m/s



Poll

Which statement describes this x vs. t graph?

1. Dr. T drives at a constant velocity in the +x direction.
2. Dr. T drives at a constant velocity in the −x direction.
3. Dr. T is sitting in a parked car.



Newton's First Law

An object moves in a straight line at constant speed except to the extent that it interacts with other objects.

Other Evidence of Interactions

- A change in velocity (direction or speed) is not the only evidence of an interaction. Other evidence includes:
  - change of identity (radioactive decay for example)
  - change of shape or configuration
  - change of temperature
  - no change (when one is expected)