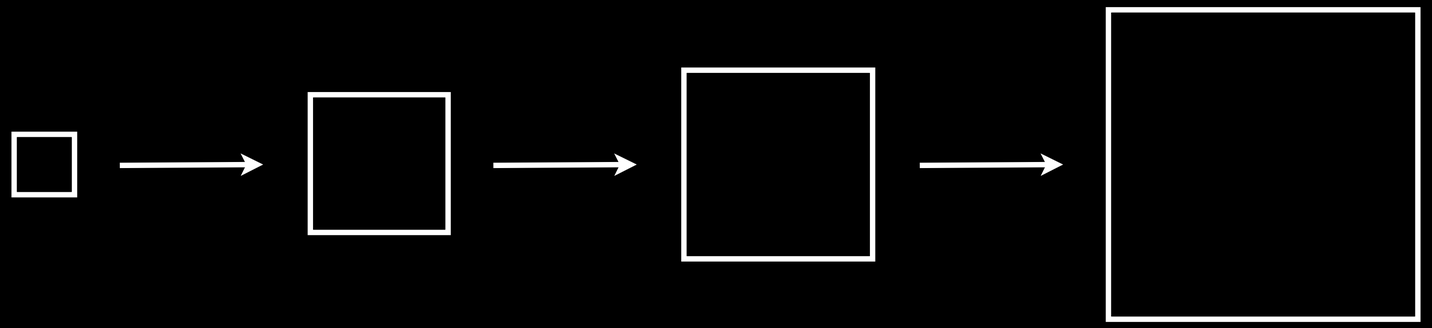
A calculator question: 10^5 = ?

A) 1E5
B) 10E5
C) neither of the above

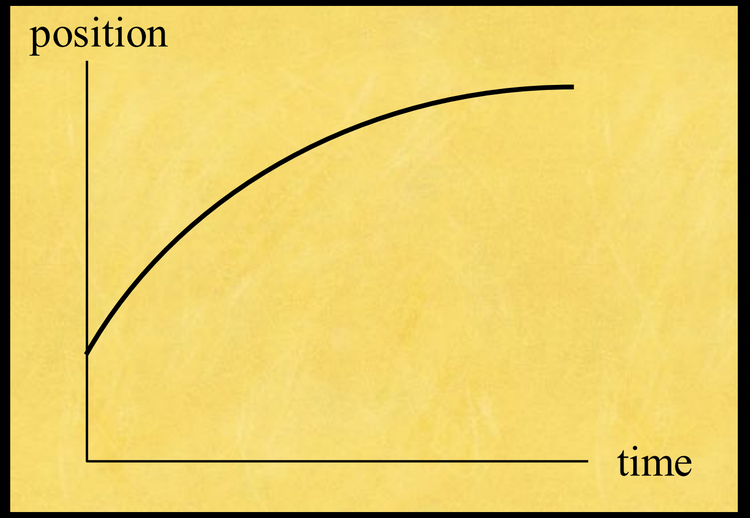
A square with edge length L is made larger and larger . . .



As the square grows, the ratio
(length of perimeter)/area:

A) increases
B) decreases
C) stays the same
D) depends

A train car moves along a long, straight track. The graph shows the position as a function of the train.



The graph shows that the train:

A) Speeds up all the time
B) Slows down all the time
C) speeds up part of the time and slows down part of the time
D) moves at a constant velocity
E) None of the above

An object goes from one point in space to another. After it arrives at its destination, the size of its displacement is . . .

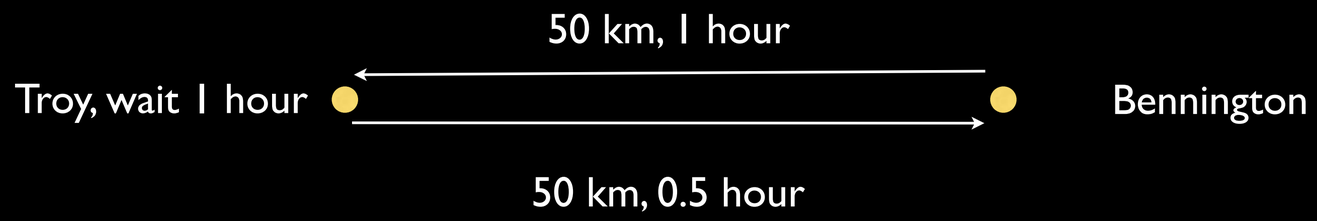
A) always greater than or equal to . . .
B) always equal to . . .
C) either smaller than or equal to. . .
D) could be smaller or larger . . .

. . . than the distance traveled.

As I walk, what is my typical speed?

A) 0.2 m/s
B) 2.0 m/s
C) 20 m/s
D) 200 m/s

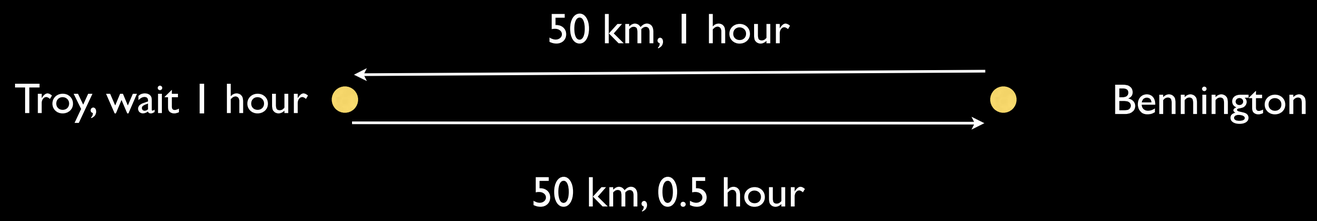
A person starts in Bennington, drives to Troy (50 km away) in 1 hour, stays in Troy for 1 hour, then speeds back to Bennington in 30 minutes.



What's the average speed of the round trip?

A) Zero
B) 40 km/hr
C) 67 km/hr
D) 75 km/hr
E) None of the above

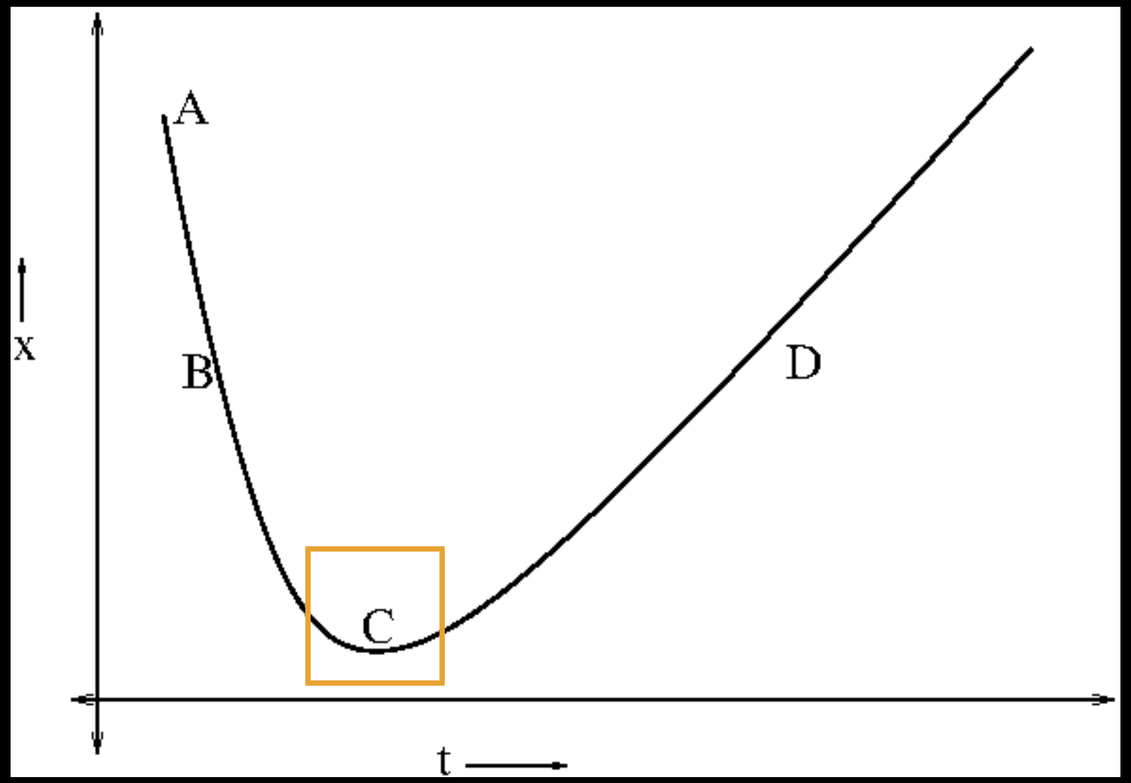
A person starts in Bennington, drives to Troy, 50 km away, in 1 hour, stays in Troy for 1 hour, then speeds back to Bennington in 30 minutes.



What's the average *velocity* of the round trip?

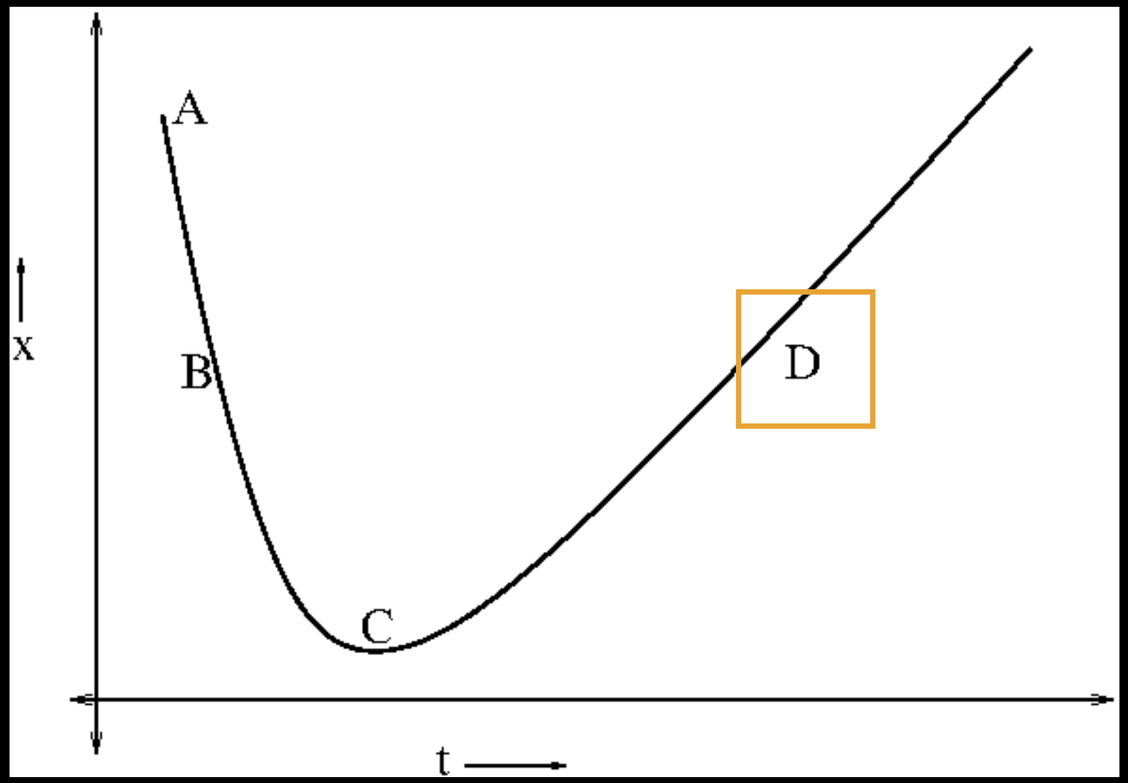
A) Zero
B) 40 km/hr
C) 67 km/hr
D) 75 km/hr
E) None of the above

Imagine the motion of a bead along a string is represented by the following graph. At what location does the bead experience maximum *acceleration*?



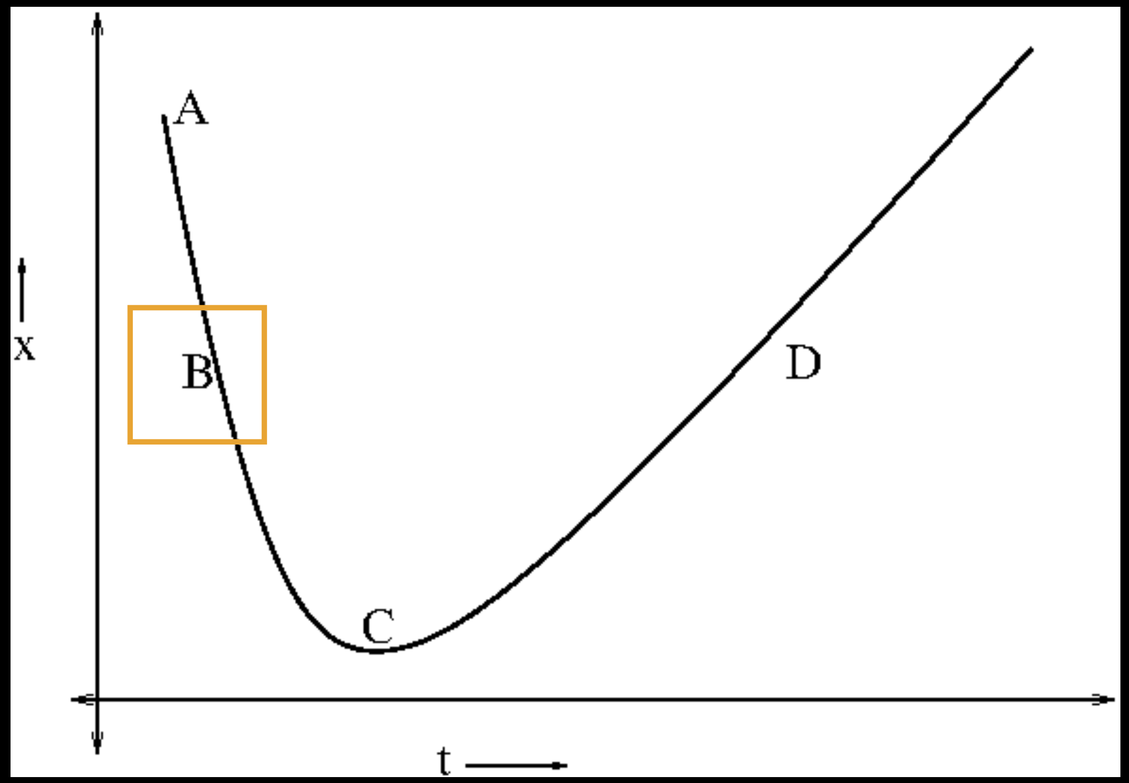
E) None of the indicated locations

Imagine the motion of a bead along a string is represented by the following graph. At what location does the bead experience maximum *velocity*?



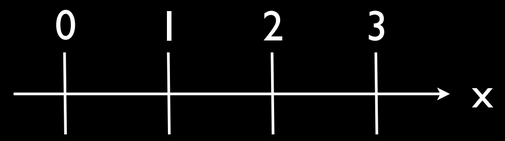
E) None of the indicated locations

Imagine the motion of a bead along a string is represented by the following graph. At what location does the bead experience maximum *speed*?

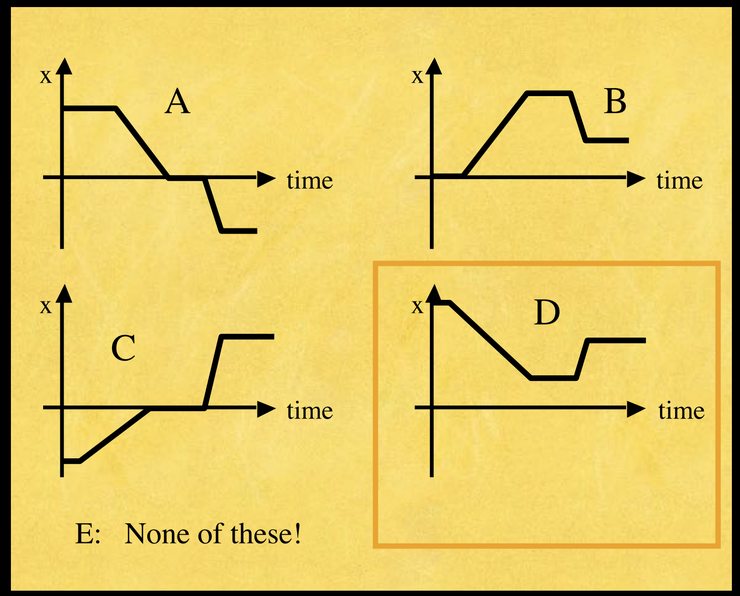


E) None of the indicated locations

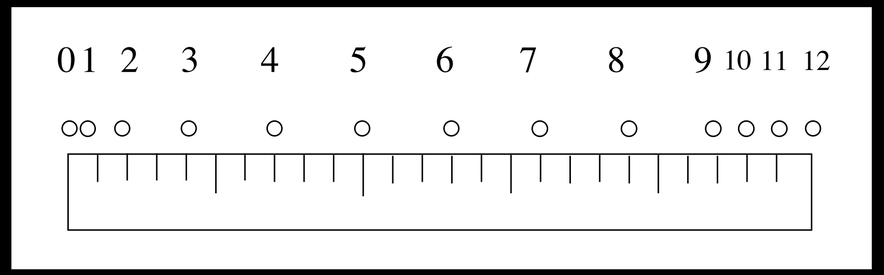
A person initially at point 3 on the x-axis stays there for a while and then strolls along the x-axis to point 1, stays there for a bit and then runs to point 2 and remains there.



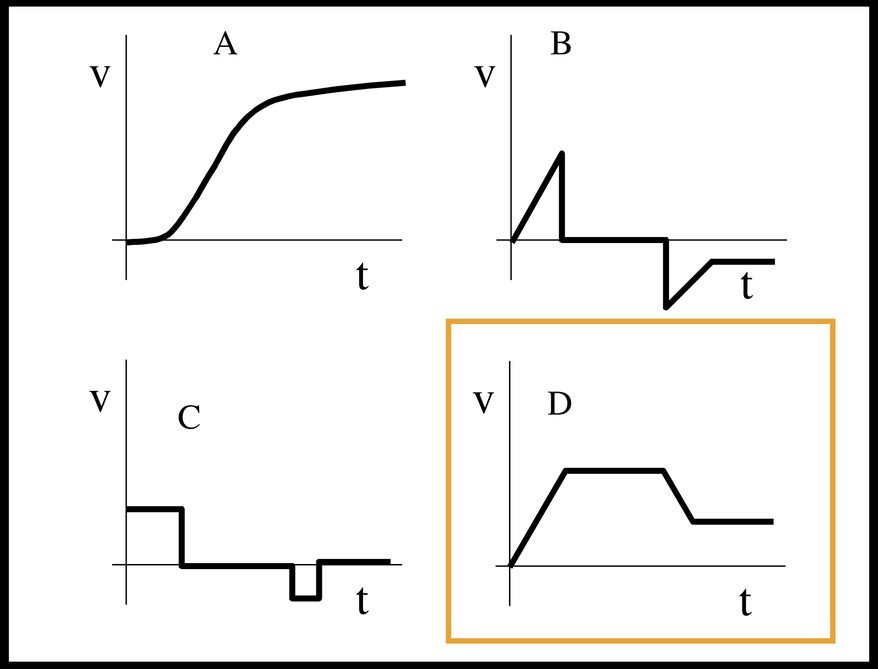
Which of the following graphs depicts this motion?



The "multiflash photograph" below shows a ball rolling along a surface. The camera flashed once a second for 12 seconds, and the total time elapsed is shown above each image.

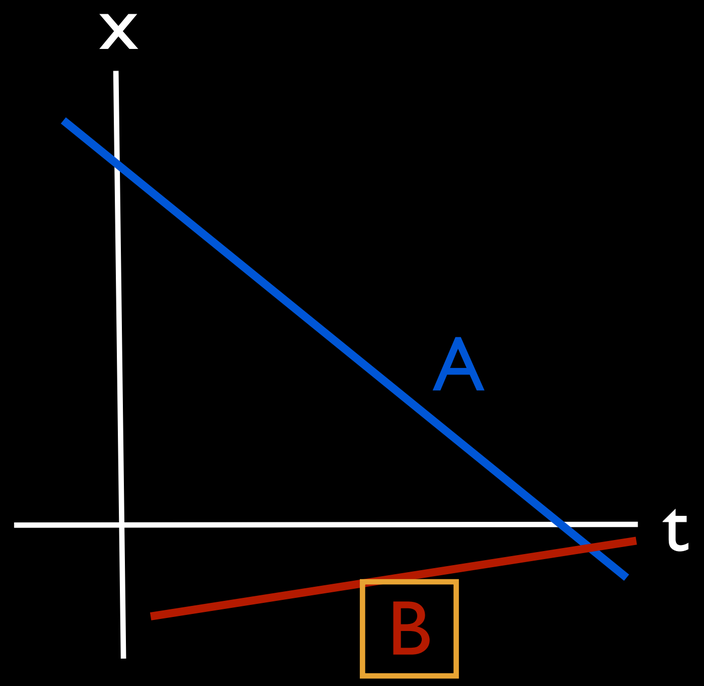


Which graph best represents the ball's *velocity* as a function of time?

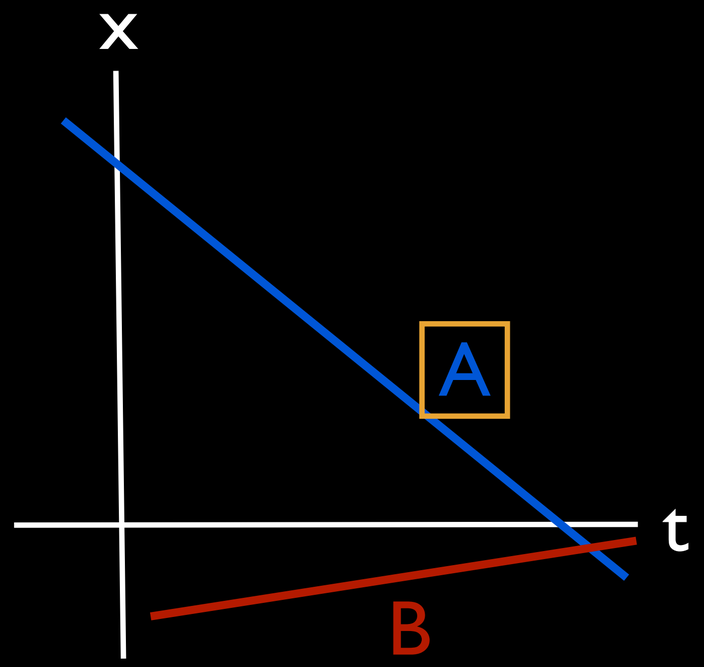


E) None of these

Which object, A or B, has the largest velocity?



Which object, A or B, has the largest *speed*?



A ball is thrown straight up. At the top of its trajectory, its

A) velocity is zero, accel. is zero.
B) velocity is non-zero, accel. is non-zero.
C) velocity is zero, accel. is non-zero.
D) velocity is non-zero, accel. is zero.

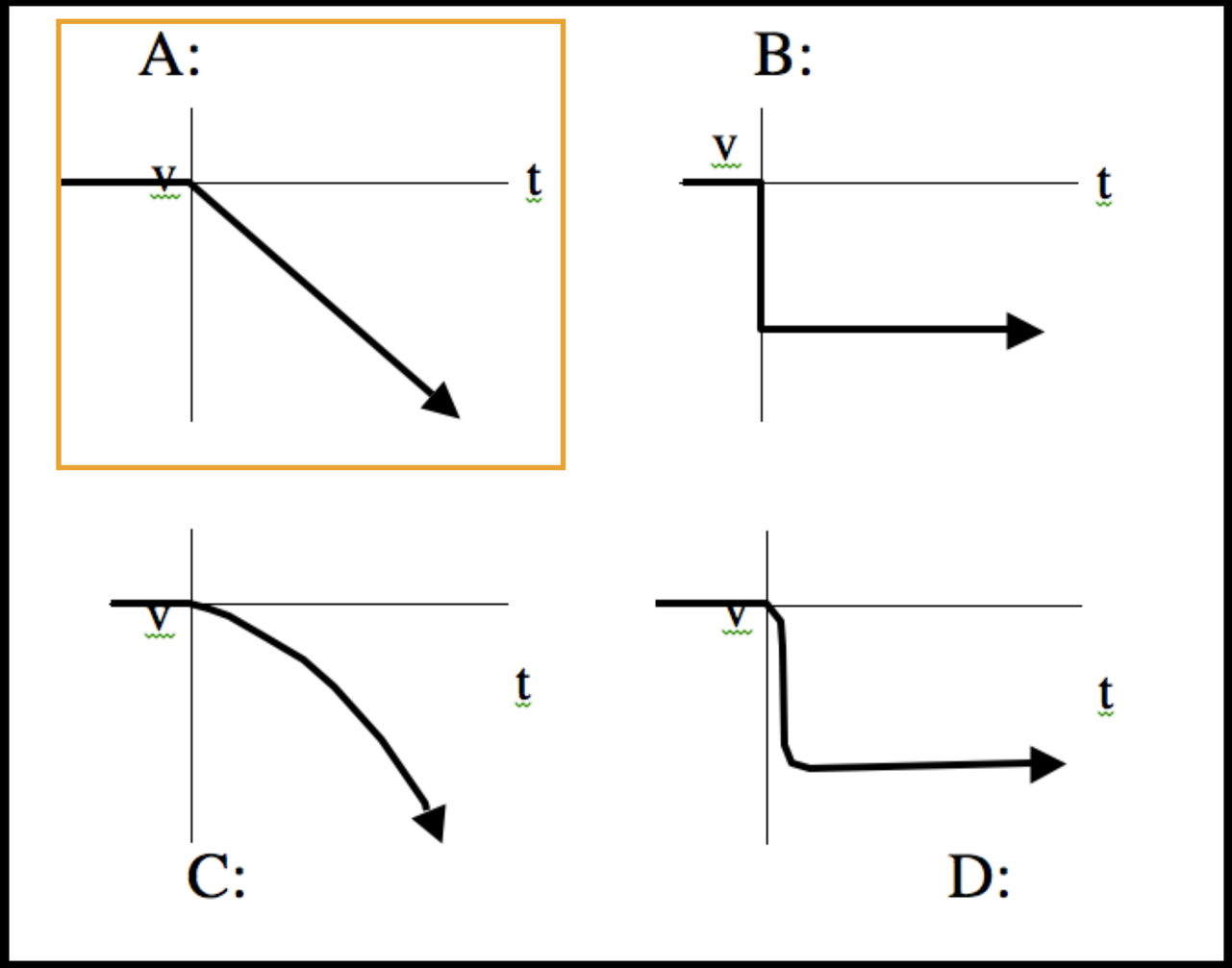
While the ball is in motion under the influence of gravity only (free-fall) the acceleration is...

A) positive
B) negative
C) Can't tell.

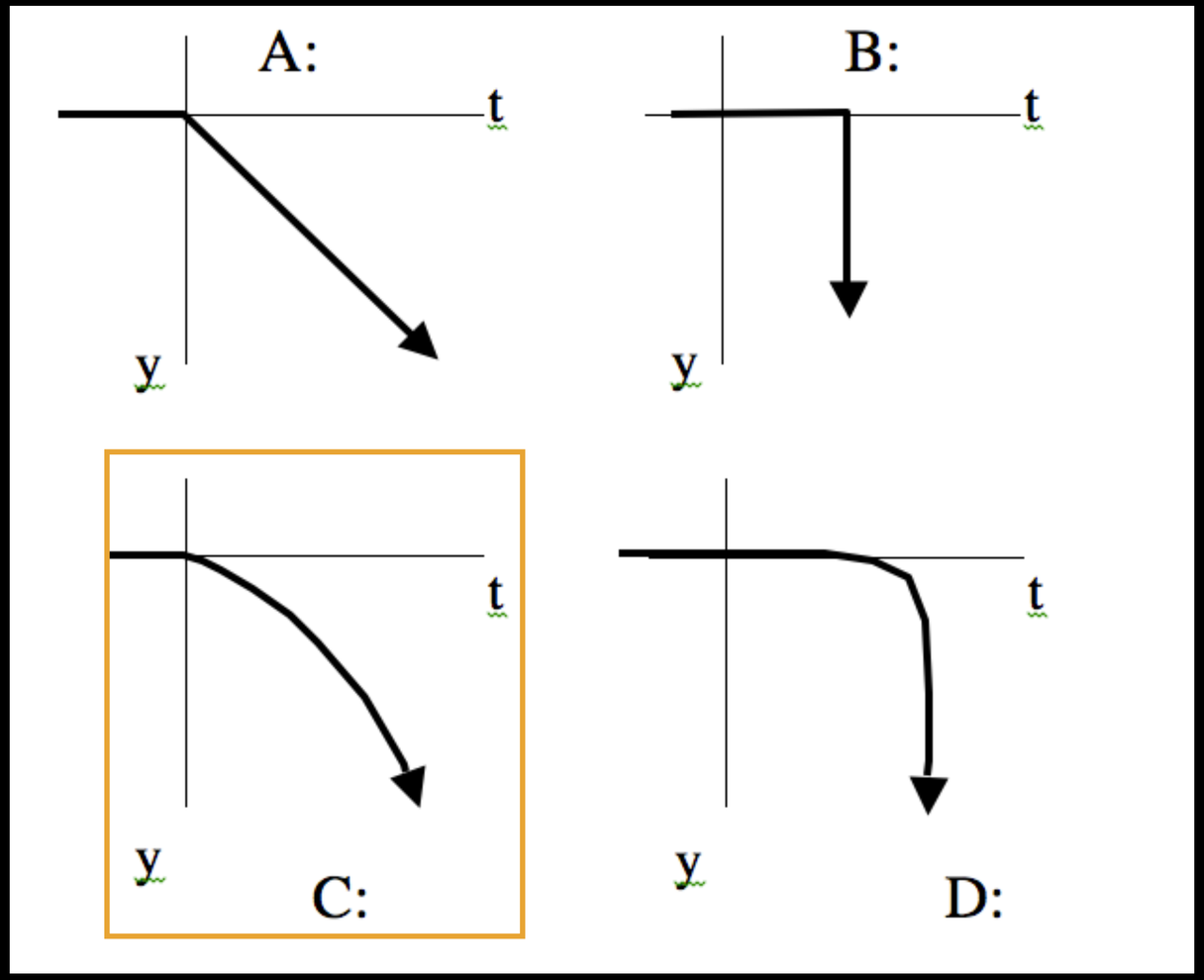
If you drop an object in the absence of air resistance, it accelerates downward at 9.8 m/s^2. If instead you *throw* it downward, its downward acceleration after release is:

A) Less than 9.8 m/s^2
B) 9.8 m/s^2
C) More than 9.8 m/s^2

I drop a book at t=0. Which plot below best represents velocity as a function of time?



I drop a book at t=0. Which plot below best represents *position* as a function of time?



A ball is fired straight downward out of a special spring-loaded gun, which produces constant acceleration. Upward is chosen as the positive direction. Assume that air resistance is negligible. Which graph properly represents acceleration of the ball?

