

1/21/14

# Quiz

Turn in your quiz on the left hand side of your group's folder



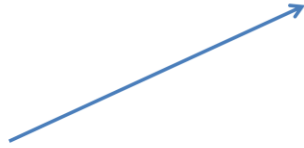
Graded work can be found on the right hand side.

Please pick up your movies in lab this week



## Vocabulary question

- What is the difference between **magnitude** and **distance**?



Displacement vector: **Magnitude is distance**  
Velocity vector: **Magnitude is speed**

# Practice

- Scalar Quantity
- Vector Quantity
- Magnitude
- Length
- Position
- Displacement
- Velocity
- Speed

## **Which one is a Spot?**

- A. Length
- B. Position
- C. Displacement
- D. Both A & B
- E. Both B & C

B. Is simply a location not how far, but where.

## **Which are vector quantities?**

- A. Velocity and speed
- B. Position and displacement
- C. Displacement and velocity
- D. Speed and position

C. Displacement is how far and in what direction. Velocity is how fast and in what direction.

## **Which are scalar quantities?**

- A. Velocity and speed
- B. Position and displacement
- C. Displacement and velocity
- D. Speed and position

D. Speed is just the magnitude of velocity (how fast) and position is the location of an object (no direction in location)

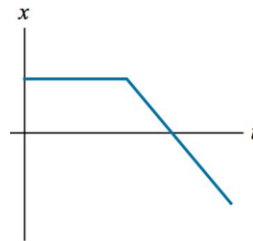
**The slope at a point on a position-versus-time graph of an object is**

- A. the object's speed at that point.
- B. the object's average velocity at that point.
- C. the object's instantaneous velocity at that point.
- D. the object's acceleration at that point.
- E. the distance traveled by the object to that point.

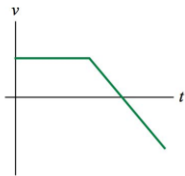
Answer: C The slope tells you more than speed because it tells you if it's in the positive or negative direction. The slope is the velocity at that instant not the average over a range of time therefore it's the "instantaneous velocity."



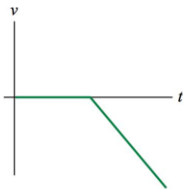
A graph of position versus time for a basketball player moving down the court appears like so:



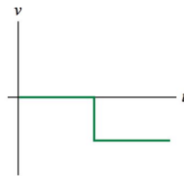
Which of the following velocity graphs matches the above position graph?



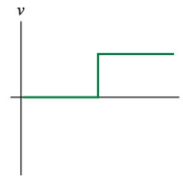
**A.**



**B.**



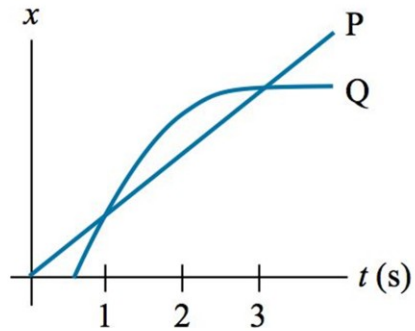
**C.**



**D.**

Answer: C The player's position is constant at first and then he moves in the negative  $x$  direction at a steady pace.

Masses P and Q move with the position graphs shown. Do P and Q ever have the same velocity? If so, at what time or times?



- A. P and Q have the same velocity at 2 s.
- B. P and Q have the same velocity at 1 s and 3 s.
- C. P and Q have the same velocity at 1 s, 2 s, and 3 s.
- D. P and Q never have the same velocity.

Answer: A The slope of a position vs. time graph indicates the velocity. If you look at line Q, it has the same slope as P only at the 2 second mark.

## **Workbook Section 2.3**