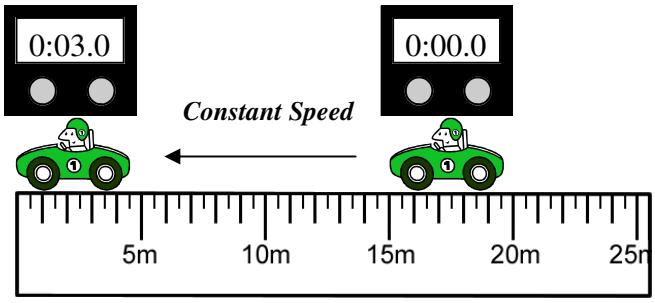
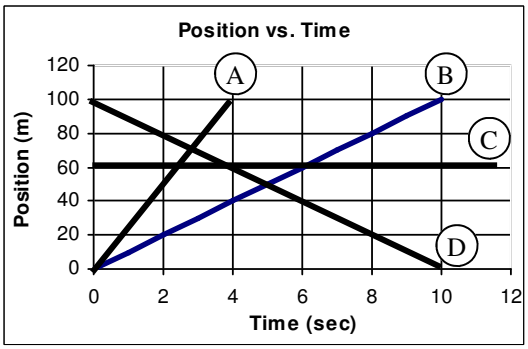
Due Tues., Aug 30

# 2011 PreAP Linear Motion 5

1. A. Is the car at the right moving left or right?
   B. Is this the + or − x direction?
   C. What is the ΔD for the object?
   (*Use the same part of the car to measure.*)
   D. What is the ΔT?
   E. What is the speed of the object?




   F. (Careful) What is the velocity of the object?




2. Assuming right is positive, which line segment or line segments…
   A. Shows the fastest speed?
   B. Shows an object moving to the right?
   C. Shows an object moving to the left?
   D. Shows an object at rest?
   E. Shows positive velocity?
   F. Shows negative velocity?

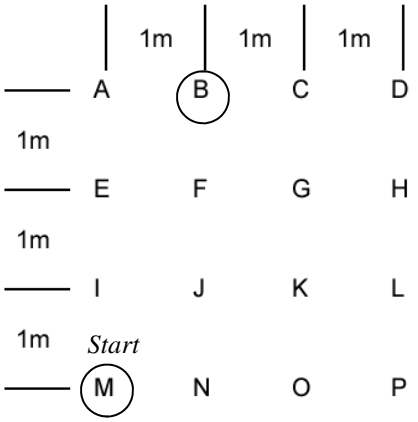
*From the "Acceleration" Notes*:

3. What are the two ways you know an object is accelerating?

*The symbol "Δ" is delta and means "change of". Δ always equals final − initial. So, $\Delta x = x_f - x_i$ and $\Delta v = v_f - v_i$.*
*Also, remember that left is negative and right is positive for velocity and position.*

4. An object is moving 30 m/s to the right. After 5 seconds it is moving 10 m/s to the left.
   A. * Vi = B. * Vf = C. t =
   D. * Calculate the acceleration of the object.

5. An object is moving 45 m/s to the left. After 7 seconds it is moving at only 10 m/s to the left.
   A. Vi = B. Vf = C. t =
   D. Calculate the acceleration of the object.




*Using your "Position, Distance, Displacement" notes*:

6. A track has a perimeter of 120 m. If you walk completely around the track 3 times….
   A. What distance did you walk?
   B. What is your displacement?

7. The object at the left starts at M and moves to B. Find the following displacements:
   A. Δx =
   B. Δy =

8. If an object moves from L to N, give the vertical and horizontal displacements.

$\vec{V}_{ave} = \frac{\Delta x}{\Delta t}$ ← Displacement, not distance $S_{ave} = \frac{D_{total}}{t_{total}}$ $S = \frac{\Delta D}{\Delta t}$

*Instantaneous speed is at a particular moment. Your speedometer shows instan-*

9. An object moves 24 m to the right in 6 seconds and then 10 m to the left in 2 seconds.
   A. * What is the total distance traveled?
   B. Calculate the average speed of the object for the journey.

   C. * What is the total displacement of the object (*remember +s and −s*)?
   D. Calculate the average velocity of the object.

   E. What is the instantaneous speed 3 seconds into the journey?

Answers:

4A) +30 m/s  4B) −10 m/s  4C) 5sec  4D) $-8\ m/s^2$

9A) 34 m  9C) 14 m