A-Day: Due Wed., Sept 19 (Assigned: 9/17)
B-Day: Due Thurs., Sept 20 (Assigned: 9/18)

Linear Motion 8

When do you use d (distance) or Δx (displacement)? Use d to find basic speed. Use Δx to find acceleration and in more complex examples when you need the kinematic equations.

1) A car is moving to the left at 15 m/s. If the car travels 35 m, how fast is it going after 8 seconds?
Variables: Equation: Solve:

Try to answer the following without your notes, then use your "Freefall" notes to check yourself.
Example 1) "An object is thrown 6 m/s into the air, how high does it go?"
Example 2) "An object is dropped from 8m. How fast is it going at the bottom?"
Example 3) "A person throws an object 12 m/s into the air, how long does it take to get back to the ground?"
Example 4) "A person throws an egg at the side of a building. If the egg is in the air for 3 seconds and hits 4 m up, find the initial velocity of the egg."

2) A) In Example 1, what are you looking for (what variable)?
B) In Example 2, what is the object's initial velocity?
C) In Example 3, what is are you looking for?
D) In Example 4, what is the egg's acceleration?
E) In Example 2, what is Δy?
F) In Example 3, what is vi?
G) In Example 1, what is vf?
H) In Example 4, what is Δy?
J) In Example 3, what is the acceleration?
K) In Example 3, what is Δy?
L) In Example 3, what is vf?

Use what you just learned to answer the following:

3) An object is thrown 6 m/s into the air, how high does it go?
Variables: Equation: Solve:

4) An object is thrown 6 m/s into the air, how high does it go?
Variables: Equation: Solve:

5) Which of the following IS NOT in freefall? A) A person falling down. B) A hammer thrown off of a roof; C) A balloon falling. D) A plane with its engines off. E) A baseball after it is hit. F) A feather falling (on the earth).

Use your notes on Conversion to do the following (do it step-by-step).
Given: 12 in = 1 ft 3.3 ft = 1 m 5280 ft = 1 mi (mile)

6) If you are trying to convert from weeks to hours, what conversions would you have to do? (*weeks to _____, to _____,etc*).

7) If you are trying to convert from meters to miles, what conversions would you have to do?

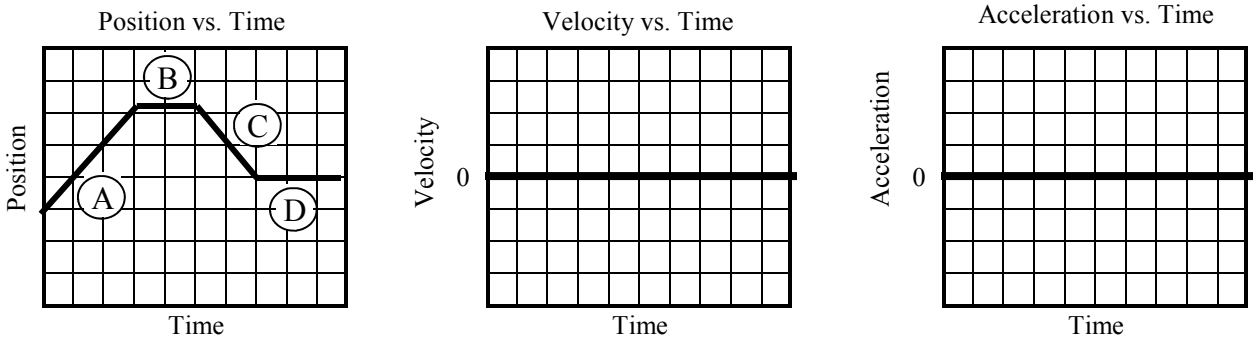
8) Convert 6 days to seconds.

9) What abbreviation do we use for miles?

10) Convert 10 mph (miles per hour) to meters per sec.

11) In the position vs time graph below,
   A. The slope tells you what about the object?
   B. Does the slope of segment A change?
   C. So, will the velocity of segment A change?

12) Transfer the position vs time graph to the other two graphs.



13) In the position vs time graph below,
   A. Does the slope of segment B change?
   B. So what does segment B show?
   C. Transfer the graph to the other graphs.