A-Day: Due Fri., Sept 21 (Assigned: 9/19)
B-Day: Due Mon., Sept 24 (Assigned: 9/20)

Linear Motion 9

Test will be Tuesday and Wednesday.

1) Accelerating or not? Yes or No?
   A. ____ An object speeds up.
   B. ____ An object moves at constant velocity.
   C. ____ An object covers less distance every second.
   D. ____ An object is dropped.
   E. ____ An object covers the same distance every second.
   F. ____ An object turns a corner at constant speed.

2) A) How many centimeters in a meter? B) How many millimeters in a meter?

3) A) 4.3 ¢ = _____ dollars. B) 2.4 cm = ____ meters. C) 3.4 mm = ____ m

4) A) Write 39,500,000 in scientific notation: B) Write out 4.5×10^{-6}:

Example 1) "A ball is thrown from the roof of a 3 m tall building. If it is falling at 30 m/s just before it hits the ground, how fast was it thrown?"
Example 2) "A potato gun shoots its spud straight up going 60 m/s (Awesome!) How high does the veggie go?"
Example 3) "My Mom keeps her favorite Elvis plate at the top of the 1.5 m tall fireplace. Like the clumsy fool that I am, I accidentally bump it and it falls to the floor. How fast is it going before it shatters into a million pieces?"
Example 4) "Calvin is sleeping O so tranquilly in his backyard. Hobbs, 3 m above on a ladder, decides to cool him down a bit. He throws a water balloon 2 m/s down towards Calvin. If the balloon is going 8 m/s as it slams into Calvin, how much time did it take the balloon to get down from Hobbs?"

5) A) In Example 1, what are you looking for?
   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 acceleration of the balloon after it is thrown?
   E) In Example 2, what are you looking for?
   F) In Example 3, what is v_i?
   G) In Example 1, what is v_f?
   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 2, what is v_f?

Use what you just learned to answer the following:

6) "A ball is thrown from the roof of a 3 m tall building. If it is falling at 30 m/s just before it hits the ground, how fast was it thrown?"
   Variables: Equation: Solve:

7) A potato gun shoots its spud straight up going 60 m/s (Awesome!) How high does the veggie go?
   Variables: Equation: Solve:

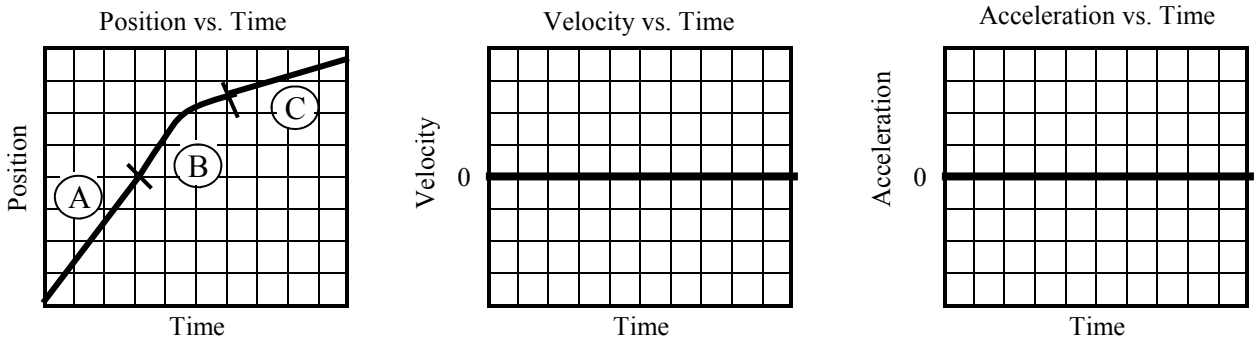
Use your notes on Conversion to do the following (do it step-by-step). For full credit I MUST see conversion factors.
Given: 12 in = 1 ft 3.3 ft = 1 m 5280 ft = 1 mi (mile)

8) Convert 450 ft per min to ft per hour.

9) Convert 12 miles per hour (mph) to meters per sec.

I assume by now that you know how to find slope, etc. If you need more help, come see me or rework old homeworks.

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



11) Which line above (A or C) has the highest velocity?

12) An object is moving 10 m/s to the left. 4 seconds later it is moving 3 m/s to the right. What is the object's change of velocity? (Don't out think the problem.)