A-Day: Due Wed., Sept 7 (Assigned: 9/5)
B-Day: Due Thurs., Sept 10 (Assigned: 9/6)

Linear Motion 4

Safety Contracts are now overdue—get them in!!!!

1) A) If $gt = 4c + ax$ solve for "c".

2) Remember Δ = final – initial.
   A) Find the Δv for an object that is going 20 m/s then stops.

   B) Find the Δv for an object that is going –10 m/s then stops.

   C) Find the Δv for an object that is going -20 m/s and ends up going –5 m/s.

   D) Find the Δv for an object that is going 10 m/s and ends up going 40 m/s.

3) Positive (+) or Negative (–)?
   A) ___ Acceleration for an object speeding up in the negative direction?
   B) ___ Position for an object to the left of the origin?
   C) ___ Velocity for an object moving left?
   D) ___ Position for an object to the right of the origin?
   E) ___ Acceleration for an object slowing down in the negative direction?
   F) ___ Velocity for an object moving to the right?

4) An object feels 3 m/s^2 of acceleration for 2 seconds. If it starts at 4 m/s, find its final velocity.
   Variables: Equation: Solve:

5) Which is more precise a graduated cylinder or a beaker?
6) Why?

7) If different people use an imprecise instrument, will they all get the same number?

8) What if they use a precise instrument?

   Remember: an accurate device records the correct number; a precise instrument will record the same (or close) number each time.

9) An object has a known mass of 3.4 kg. A group of people measure the mass with a spring scale and record: 4.2 kg; 4.1 kg; and 4.0 kg.
   A) Is the spring scale accurate? B) Is the spring scale precise?

10) If a precise instrument is not accurate, what can be done to correct the device? (*word starts with "c")*

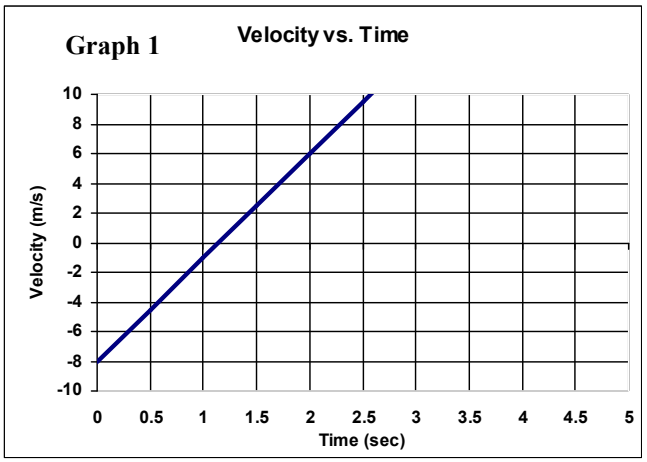
More questions on back

11) Use Graph 1 to answer the following questions:

A. The graph shows an object changing what?

B. So the slope of this graph means what?

C. Find the slope of the graph (easier if done on the graph).



D. What is the initial velocity of the object?

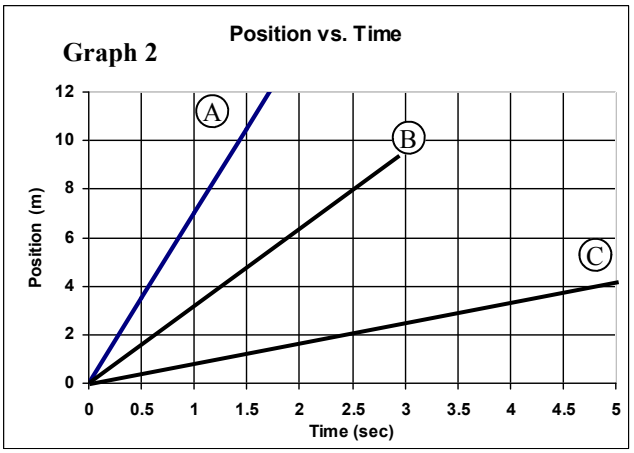
E. Give the linear equation for this graph.

y =
x =
m =
b =

Linear Graph for this line:

F. When will the object be going 23 m/s?

Use Graph 2 to answer the following questions.



12) What changes on this graph?

13) So the slope of this graph tells the object's:

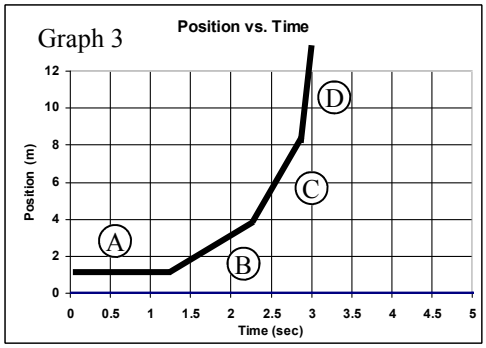
14) Which line has the highest velocity?

15) Which line has the slowest velocity?

16) What does the y-intercept mean for this graph?

17) Draw a line on the graph that began at 10 meters and has a negative velocity (amount is irrelevant).

Use Graph 3 to answer the following questions:



18) Which segment has the fastest velocity?

19) Which segment shows the object at rest?

20) Give the letters from slowest to fastest:

21) What is the object doing (use the information from the above answers)?

22) Write the following on your equation sheet (including "kinematic Equations" on the left side).

Kinematic Equations

$\Delta x = \frac{1}{2}(v_i + v_f)t$
$v_f = v_i + at$
$\Delta x = v_i t + \frac{1}{2}at^2$
$v_f{}^2 = v_i{}^2 + 2a\Delta x$
$\Delta x = v_f t - \frac{1}{2}at^2$