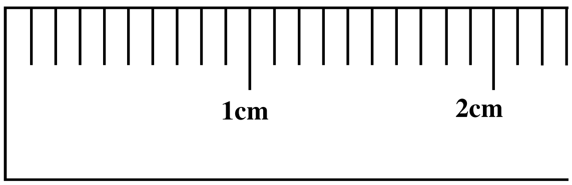
PreAP Linear Motion 3

1. Which is more precise: a graduated cylinder or a beaker? Why?

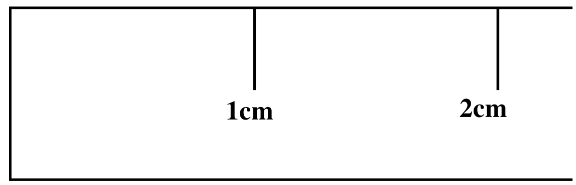
2. Define accuracy and precision.

3. Measure the following grey objects with the correct number of sig figs *(measure one unit past what is given. For instance, the second ruler will have a measurement with one decimal place).* Make sure you estimate between the gradations.

Measurement =



Measurement =

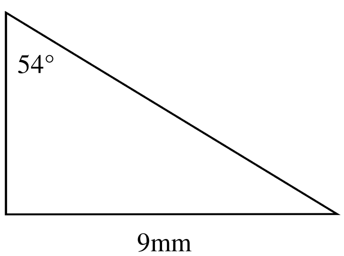


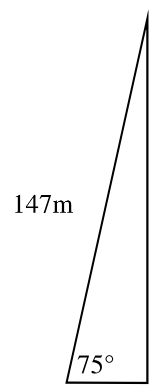
5. Convert the following, using the procedures from the notes and HW LM2:
A. * 4,500,000 nm to km (*asterisks mean answer on back*)

B. * 120 mph to m/s

3.3 ft = 1 m	5280 ft = 1 mi
12 in = 1 ft	2.54 cm = 1 in.
I assume you know about seconds, mins, etc	

6. What is the length of the adjacent sides for each of the following triangles? *(remember to include units here!) [Use your calculator.]*





7. A. Calculate the slope (with units) between 0 and 1 sec.
Label it on the graph at point A.

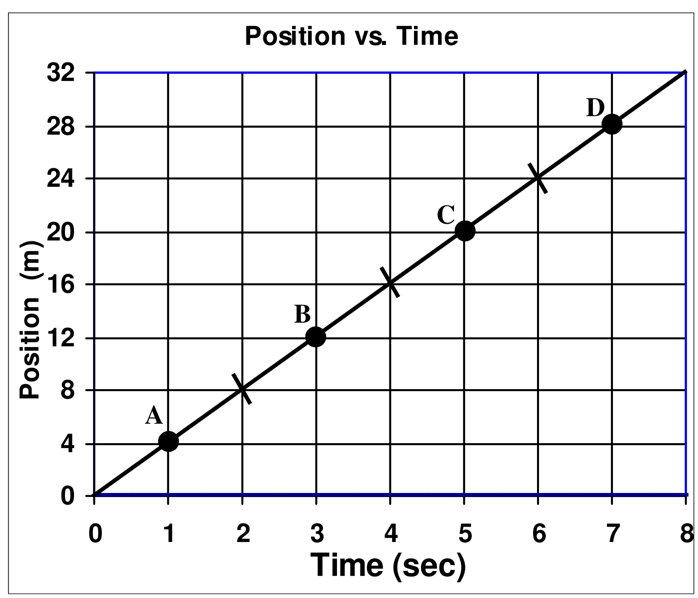
B. Calculate the slope between 2 and 4 sec. Label it at B.
(*Remember to use Δy/Δx, not y/x.)*

C. Calculate the slope between 4 and 6 sec. Label it at C.

D. Calculate the slope between 6 and 8 sec. Label it at D.

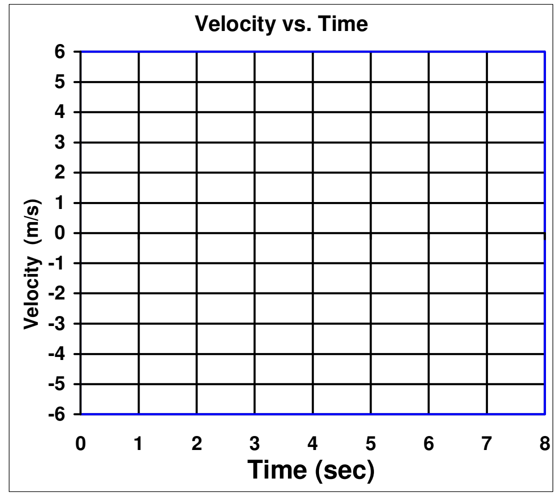
E. So, how did the slope of the line change?

You should see that the object is moving and that the slope you just found is the speed or velocity of the object.



(continued on next page)

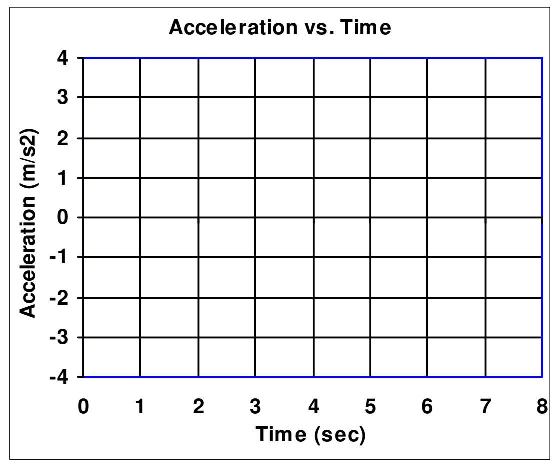
F. For each of the velocities (slopes) you found on the position graph put dots on the velocity graph at the right. (*Put dots at 1 sec, 3 sec, 5 sec, etc*).



G. Connect the dots to make a line on the velocity graph.

H. Notice that a constant sloped line on a position vs. time graph becomes what kind of line on a velocity vs. time graph?

I. Transfer the velocity graph to the acceleration vs. time graph below. Was this object accelerating?



7. For the velocity vs. time graph,

A. Which is the dependent variable?
B. Which is the independent variable?

5A. 4.5×10^{-6} km
5B. 53.33 m/sec

