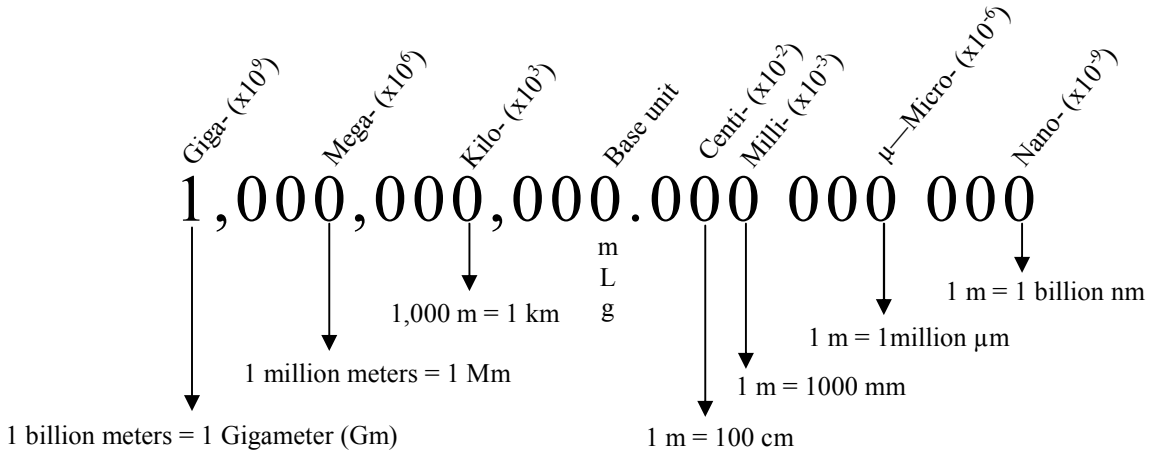
A-day: Due Fri., Aug 27
B-day: Due Mon., Aug 30

2010-11 PreAP Linear Motion 2



$\left(\frac{4}{100}\right) = .04$ OR $\left(\frac{4}{1\times10^{2}}\right) = 4\times10^{-2}$

So, $3.5\mu\text{m}$ to m = $\left(\frac{3.5\mu\text{m}}{1}\right)\left(\frac{\text{m}}{1\times10^{6}\mu\text{m}}\right) = 3.5\times10^{-6}\text{m}$

Do we understand, now?

1. A. 8.2 nL = _____ L B. 6.8 MHz = _____ Hz C. 4.5 μC = _____ C

   When using your scientific calculator the "EE" means "×10". So, 8EE6 = 8×10^{6}. Do NOT use the carat key!

2. Convert 75 km to mm.

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

4. Define accuracy and precision.

5. How many significant figures do each of the following numbers have?
   A. 6050 m B. 20.1 sec C. 1.0040×10^{6} m/s D. 0.1500 m

6. Using the previously numbers, do the following math operations, giving your answers with the correct number of significant figures and correct units.

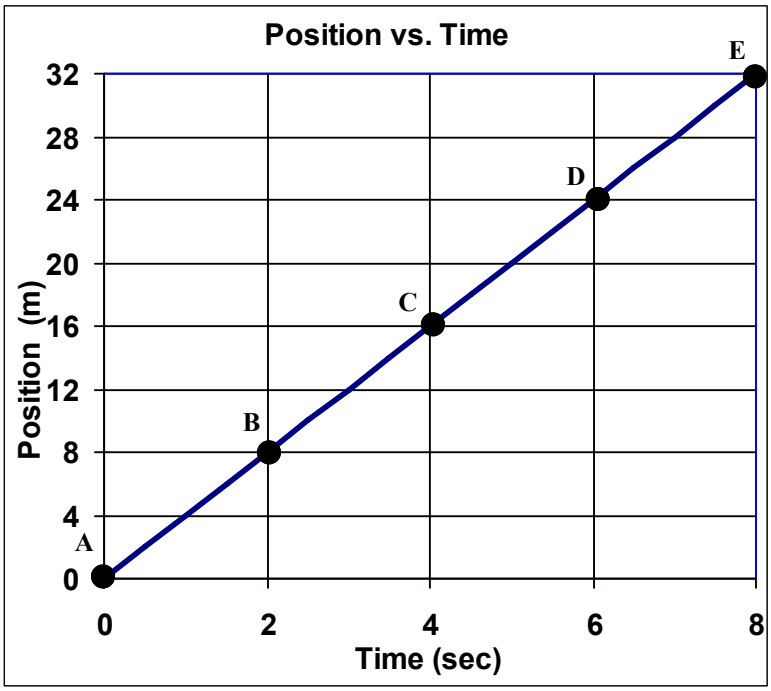
   I. B(C) = II. A/B =

   III. A + B = IV. A − D =

7. Three people measure three horizontal distances: 5.4 m; 12.56 cm; 34.1 mm.
   A. Convert all of the numbers into the same units WITHOUT scientific notation.

   B. What is the total distance (add them), giving your answer with the correct number of significant figures.

8. A. Calculate the slope between points A and B:
Write it on the graph between the two points.
(*Please include units*)



B. Calculate the slope between points B and C:
Write the slope on the graph between the points.

C. Calculate the slope between points C and D:
Write the slope on the graph between the points.

D. Calculate the slope between points D and E.
Write the slope on the graph between the points.

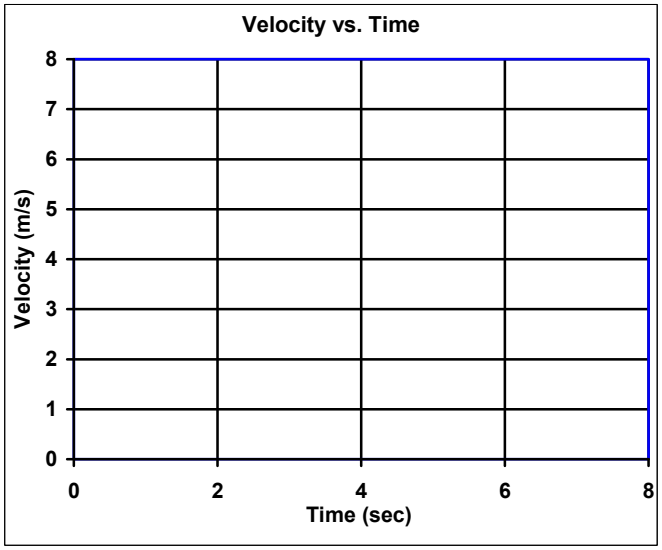
E. So, what do you know about the slope of the line on the graph?

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

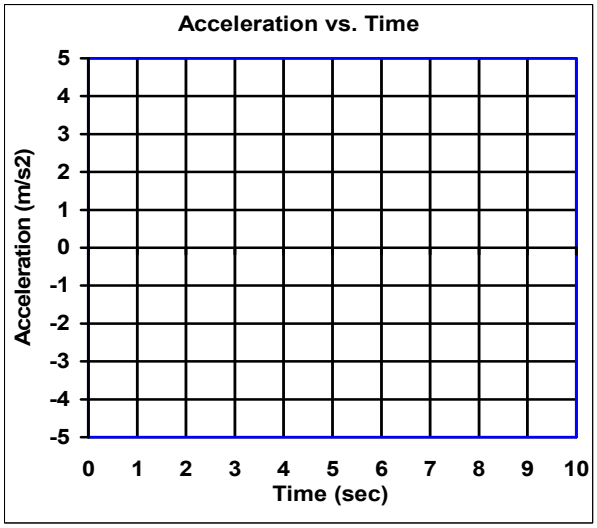
F. For each of the velocities (slopes) you found on the above graph put dots on the velocity graph at the right.
(*Put dots at each 2 sec, 4 sec, 6 sec, etc*).

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?



9. Transfer the velocity graph to the acceleration vs. time graph.



10. For the velocity vs. time graph,
A. Which is the dependent variable?
B. Which is the independent variable?

Math help: $x^4x^6 = x^{10}$ **and** $(x^4)^6 = x^{24}$.

11. Simplify the following:

A. $t^2t^6 =$

B. $q^8q^4/q^{-3} =$