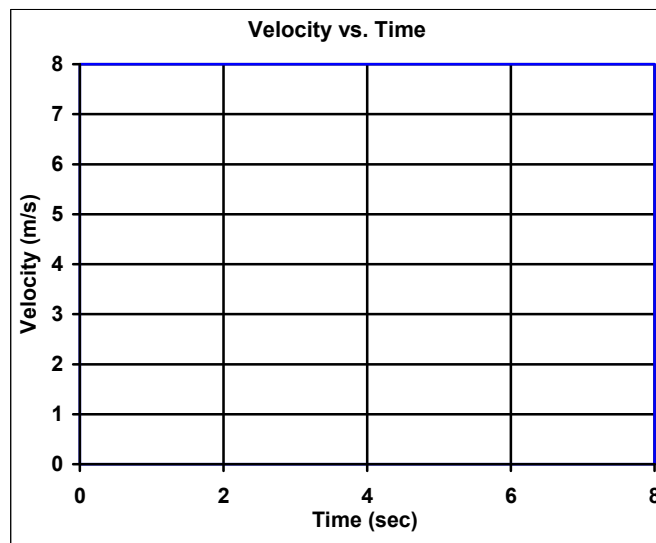# 2009 PreAP Linear Motion 3

1. 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.
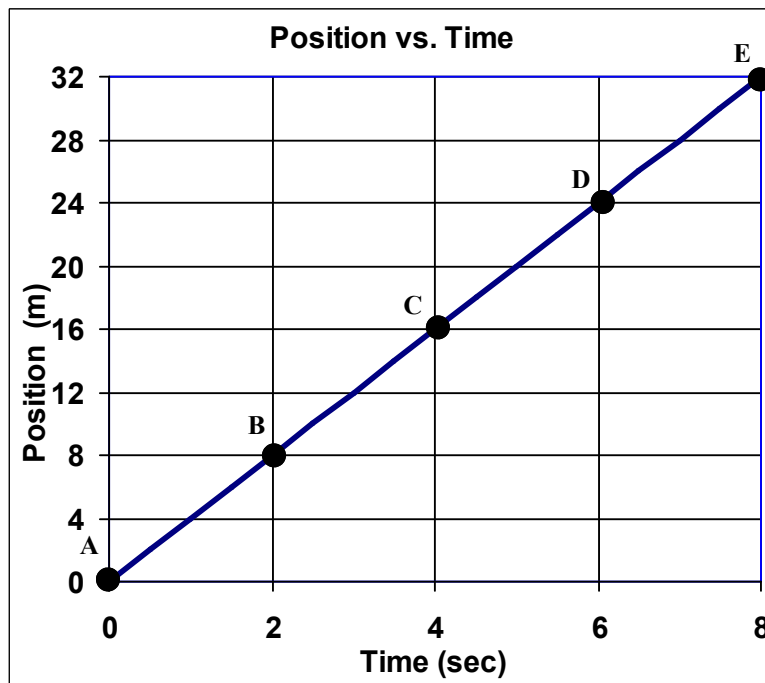
    E. So, what do you know about the slope of the
     line on the graph?

    *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?

Position vs. Time

(Graph: Position (m) vs. Time (sec). Points A(0,0), B(2,8), C(4,16), D(6,24), E(8,32) on a straight line.)

Velocity vs. Time

(Empty graph: Velocity (m/s) vs. Time (sec).)

TAKS NOTES: (Didn't have time to give in class)

Symbiosis: Two organisms living together.

Types of Symbiosis:
Mutualism: Both are benefited. Ex: bees and flowers.

Commensalism: One doesn't care. Ex: a bird living
in a tree. Good for bird; tree doesn't care.

Predation: Once kills and eats the other. Ex: Lion
and a gazelle.

Parasitism: One eats the other but the other doesn't
die; Ex: Mosquitoes eating on humans.

2. What kind of symbiosis?
    A. A barnacle (a kind of shellfish) lives on whale. Since the barnacle is
    a filter feeder (eats from the water that passes through it), living on the
    whale gives it greater food access since the whale moves, allowing more
    water to pass through it. The whale is neither helped nor harmed by the
    barnacles. What kind of symbiosis is this?

    B. Dogs living with humans.

    C. Vampire bats suck the blood of cows.

    D. Humans eating cows (like steak).

3. Carnivore, herbivore, omnivore?
    A. When we eat salads.
    B. When we eat meat.
    C. Human eat both so we are:

See the notes "Significant Figures":
4. How many sig figs are in the following measurements?
   A. 300,000,000 m/s
   B. 25.030° C
   C. 0.006 070° C
   D. 1.004 J
   E. 1.305 20 MHz

5. Carry out the following arithmetic operations, giving your answers with the correct number of significant figures:

   A. 756 g + 37.2 g + 0.83 g + 2.5 g =

   B. 3.2m/ 3.563 sec =

   C. 5.67 mm × π =

   D. 27.54 sec − 3.8 sec =

Give your answer with the correct number of significant figures.
6. Three people measuresthree horizontal distances: 5.4 m; 12.56 cm; 34.1 mm. What is the total distance (add them)?

7. A person measures three sides of a very long and skinny rectangular solid box.   Unfortunately they use two different measuring devices. The length was measured as 3.2 m. The square end is measured as 1.65 cm on a side. Realizing that volume is in the units of cubic meters (m^3), calculate the total volume of the box.

End: 1.65 cm wide
and deep

3.2 meters