A-day: Due Tues., Sept 8
B-day: Due Wed., Sept 9

2009 Physics Basics 5

3.3 ft = 1 m 5280 ft = 1 mi
12 in = 1 ft 2.54 cm = 1 in.

1. Convert 1500 m/sec to m/min.

Using the "Metric" Notes:

2. A. 12,000 m = _____ km. B. 450 cm = _____ m C. So, 560 cg = _____ g

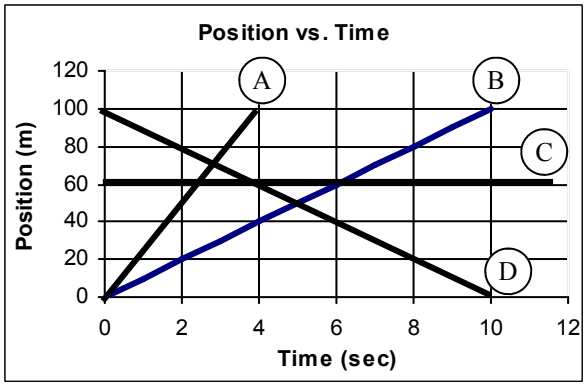
   D. 32,000 L = _____ML (mega) E. 980 mL = _____L

From your "Graphing Linear Motion Notes".

3. X or Y axis?

   A. ____ Vertical axis
   B. ____ Independent variable
   C. ____ Manipulated variable
   D. ____ Dependent variable
   E. ____ Acceleration
   F. ____ Time

4. *Use the graph at the right to answer the following.*



   A. Calculate the slope for object A (line A).

   B. Calculate the slope for object B.

   C. Calculate the slope for object C (the flat line).

   D. Calculate the slope for object D.

   E. Which object has the fastest positive speed?
   F. Which object is moving in the negative direction?
   G. What is the y-intercept for Line D
   H. Give the linear equation for Line D:

5. Put these into scientific notation: 2,450,000 = 0.0056 =

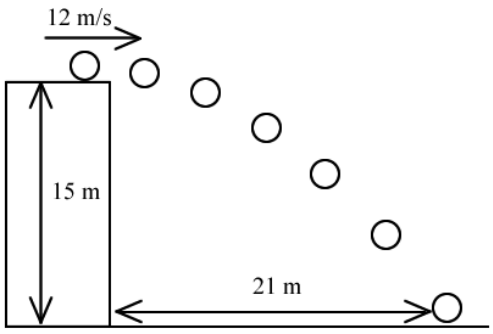
6. Put these into normal notation: 5.92×10^{-4} = 7.07×10^{6} =

7. $(6.2\times10^{-4})(3.06\times10^{8})$ =

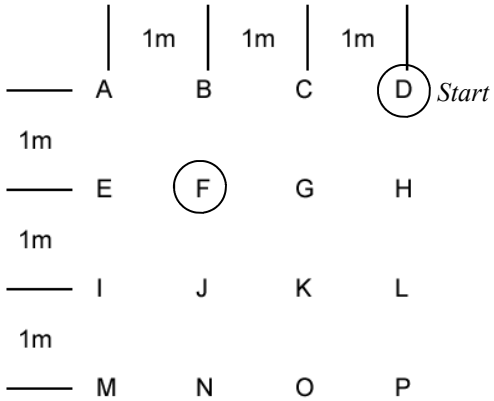
8. Put these into smallest to biggest: centi-, kilo-, micro-, mega-.

9. A. If S = D/T, then T = B. If p = mv, then v =

10. A. Below Δx = _____ and Δy = _____.



B. From D to F below: Δx = _____ and Δy = _____.



11. +, −, or 0?
    A. ____ X position if the object is to the right of the origin.
    B. ____ Displacement if you end up where you started.
    C. ____ Velocity if moving to the left.
    D. ____ Acceleration if speeding up to the right.
    E. ____ Velocity if an object doesn't change position.
    F. ____ Displacement if moving to the right.
    G. ____ Acceleration if your initial speed
    H. ____ Velocity if moving down.
    I. ____ Acceleration if slowing down while moving up (like a ball thrown into the air).
    J. ____ Velocity of an object thrown into the air at the very top (just before it comes back down).
    K. ____ Vertical displacement if it ends up below where it started.
    L. ____ Acceleration for an object that is speeding up while moving to the left.

From the "Acceleration" Notes:

12. What are the two ways you know an object is accelerating?

13. How can an object not change speed, but be accelerating?

Looking on the equation sheet below: remember that "Δ (delta)" ALWAYS means "final – initial", so $\Delta v = v_f - v_i$.
For these problems you MUST show ALL of the steps.

14. An object is moving 30 m/s to the right. After 5 seconds it is moving 10 m/s to the left. Find the acceleration of the object.
    Variables: Equation: Solve:

15. An object is moving 45 m/s to the right. After 7 seconds it is moving right at 10 m/s. Find acceleration.
    Variables: Equation: Solve:

16. Look over your TAKS information: Symbiosis (Mutualism, Commensalism, Predation, Parasitism); Carnivore, omnivore, herbivore; Food webs.

17. Write the information below on your variable and equations sheets.

Variable Sheet

	Δ	(no units)	Delta	Change of (always final – initial)
	x	m	position	Where you are from a certain place
	Δx	m	Displacement	Dist. from original position (can be 0)
	D (or d)	m	Distance	How far you travel (total)
	t	Sec	Time	Elapsed time
	v	m/s	velocity	How fast you are moving with dir.
	a	m/s^2	acceleration	How fast you change velocity
	Δy	m	Vertical Displ.	Change of verti. distance

Equation Sheet

$\Delta = final - initial$
$\Delta x = x_f - x_i$
$v = \frac{\Delta x}{t} \qquad S = \frac{D}{T}$
$a = \frac{\Delta v}{t} = \frac{v_f - v_i}{t}$
$y = mx + b \qquad m = \frac{\Delta y}{\Delta x}$