

A-day: Due Thurs., Sept 3  
 B-day: Due Fri., Sept 4

# 2009 Physics Basics 4

1. EVERYONE must have a scientific calculator. Get one or borrow one from the school. You can get a solar calculator for less than \$15.00. Make sure it has sin, cos, and tan AND an "EE" key. (You should probably stick with Texas Instruments so you don't have to learn a different system than the school's calculators.)
2. Have you made up the quiz, yet? Get it done.

From the "How to Do Word Problems" Notes:

3. What variables do you use with the following units?  
 A. 65 Joules =                      B. 3.2 kgm/s =                      C. 93 m/s =                      D. 1.1 m/s<sup>2</sup> =  
 E. 9.5 N =                              F. 18 sec =                              G. 12 kg =                              H. 0.5 minutes =
4. A car is traveling 12 m/s for 3 seconds. How far did the car move?  
Variables:                      Equation:                      Solve:
5. A person pushes with 8 N and gives 48 joules to an object. How far was the object pushed?  
Variables:                      Equation:                      Solve:
6. Given  $F = ma$ , solve for "a": a =

Remember to use the "EE" or "EXP" key for scientific notation. This is the way the calculator wants it, so do it that way. Example:  $2.4 \times 10^8$  in the calculator looks like 2.4E8 or  $2.4^{08}$  (for some calculators). The "E" means " $\times 10$ ".

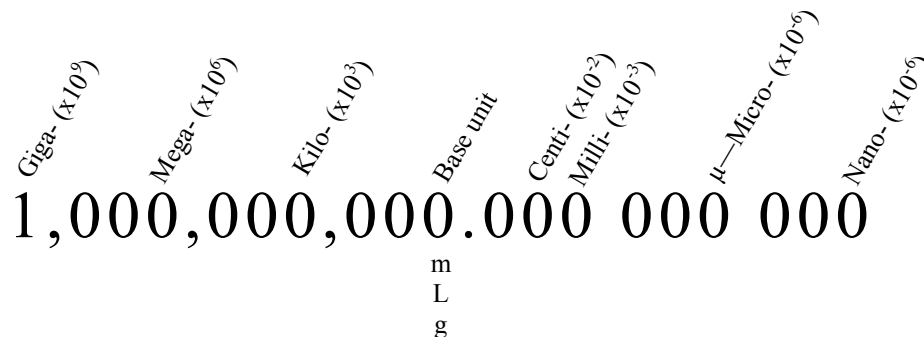
7. Do the following calculations in your calculator. Give your answer in scientific notation. (Remember that two numbers next to each other is multiplication.)  
 A.  $5.8 \times 10^8 (2.03 \times 10^8) =$                       B.  $3.8 \times 10^4 - 5.2 \times 10^3 =$

8. Convert 14 m/sec to m/min.                       $3.3 \text{ ft} = 1 \text{ m};$                        $2.54 \text{ cm} = 1 \text{ in}$   
 $5280 \text{ ft} = 1 \text{ mi}$                        $12 \text{ in} = 1 \text{ ft}$
9. Which is bigger:  
 A. Mega- or micro ( $\mu$ )?                      B. Centi- or Milli-?  
 C. Mega- or Giga-?                      D. Milli- or Micro-( $\mu$ )?

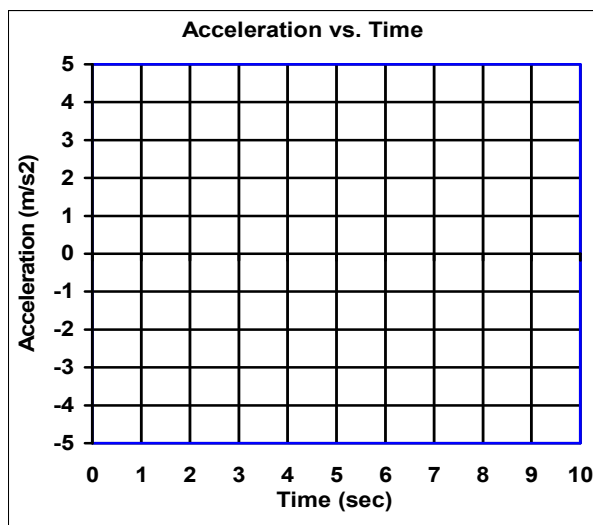
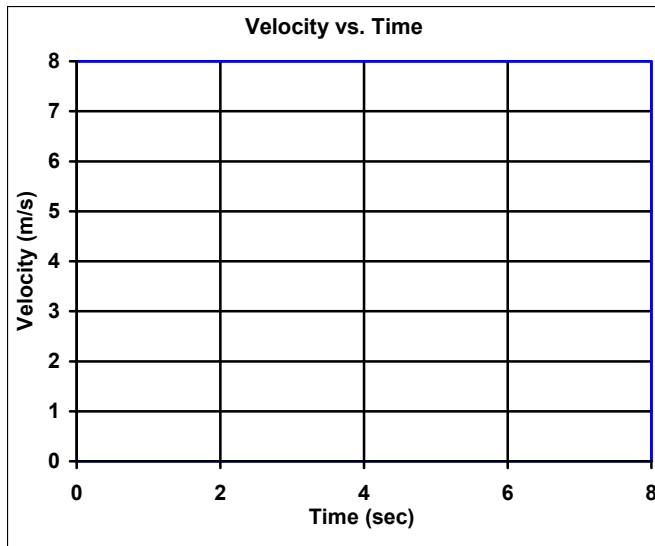
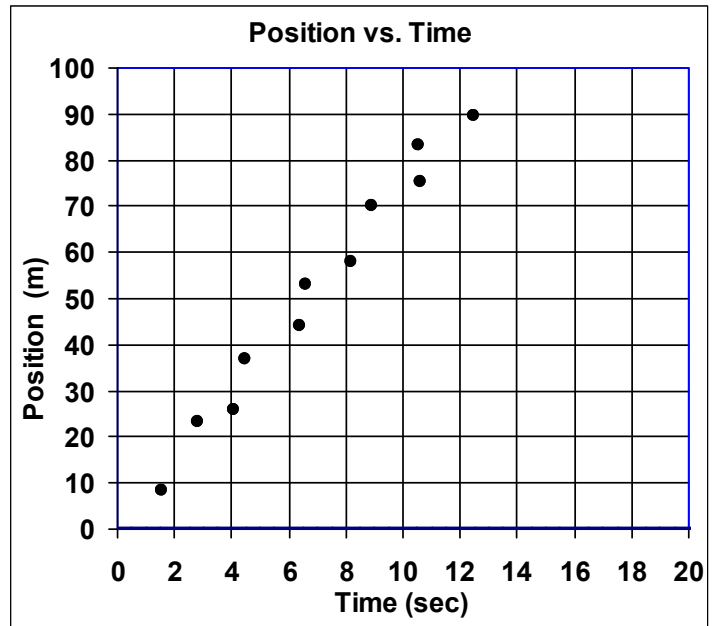
10. A. How many centimeters in a meter?                      B. How many millimeters in a meter?  
 C. How many liters in a megaliter?

For the following you may use the chart below.

11. A. Convert 650 cm to meters.                      B. Convert 5.6 Megagrams to kilograms.  
 C. Convert 12 centiliters to microliters ( $\mu\text{L}$ ).                      D. Convert 15,000 mm to meters.



12. A. Which variable is independent?
- B. On the graph at the right draw a best-fit line. *(Be sure to use a ruler. You may assume the line goes thru the origin.)*
- C. Calculate the slope of the best-fit line. *(Remember to use the line and not the data points.)*
- D. What does the slope of this graph tell you about the object?
- E. Transfer the information from the position graph to the velocity graph below.



13. A. What is the initial velocity of the object on the graphs?
- B. What is the final velocity of the object on the graphs?
- C. Does the object change velocity?
- D. Then what is the acceleration of the object?
- E. Draw the acceleration of the object on the acceleration graph below.

TAKS NOTES: Food Webs + Chains: a food chain shows how the food energy flows thru a group of organisms. A food web is made up of several food chains. The arrows show the flow of energy (the arrow points to the organism that is eating the other one). Ex. An arrow would point from grass to a cow because the cow gets energy from the grass by eating the grass.

14. A. Draw the arrows to make the animals below a food chain.
- B. Label the organisms as herbivore or carnivore.
- C. Which of the organisms is a producer?
- D. Which of the organisms is a consumer?

