

Name: \_\_\_\_\_

Period: \_\_\_\_\_ Date: \_\_\_\_\_

## TSOKOS / GIANCOLI READING ACTIVITY

### Section(s) 1-7 to 1-8

1. Skim through Appendices A-1 through A-9, and Appendix B to make yourself familiar with the information there. Put a bookmark or post-it on these appendices for later reference and solve the following problems. *I challenge you to type this assignment using Microsoft Equation ("Insert" then "Equation"). It is not mandatory, but being proficient in using MS Equation will pay big dividends later on.*

a.  $(x^3)(x^2) =$

b.  $(x^3)(y^3) =$

c.  $(x^3)^4 =$

d.  $(x^{-3})(x^2) =$

e.  $\frac{x^3y^{-4}}{x^5y^{-6}} =$

f.  $5x + 9 = 27$

g. If  $a = 3$  and  $c = 17$ , find  $b$  in the equation  $a^2 + b^2 = c^2$

- h. Solve for
- $x$
- and
- $y$
- if:

$$2x - 3y = 1$$

$$4x + 7y = 41$$

i. Solve for  $x$  if  $3x^2 - 2x - 5 = 0$

- j. If the diameter of a circle is 7mm, what is its area?

- k. If the radius of a sphere is 5cm, what is its surface area? What is its volume?

2. The inside front cover of your textbook contains a plethora of information that you will use on a regular basis. In addition, copies of these pages along with pertinent tables and equations from the chapter will be available to you on tests. Skim through the information on the inside front cover and answer the following questions:
- What is the approximate value of the permittivity of free space (include the units)? \_\_\_\_\_  
\_\_\_\_\_
  - What is the current best value for the rest mass of a neutron in kilograms? What does the number in parenthesis at the end of the base number mean?  
\_\_\_\_\_  
\_\_\_\_\_
  - What is the mean radius of the Sun (as opposed to the nice radius)? \_\_\_\_\_
  - How many ergs are there in 1 joule (J)? \_\_\_\_\_
3. Convert the following quantities:
- 600 lbs to Newtons (N) \_\_\_\_\_
  - 600 Newtons (N) to lbs \_\_\_\_\_
  - 86 kg to slugs \_\_\_\_\_
  - 86 slugs to kg \_\_\_\_\_
4. If you haven't figured it out already, the answers to the odd numbered problems are at the back of the book. Put a post-it or bookmark here as you will be going to this section often. My expectation is that you check your homework against these answers prior to coming to class. You should attempt to correct any mistakes, and ask in class if there are any you can't figure out.
5. Read section(s) 1-7 to 1-8 in your textbook.
6. Use Table 1-1 on page 8 to answer the following questions *in terms of order of magnitude*.
- Mount Everest is how many times higher than a football field is long? \_\_\_\_\_
  - The distance from the Earth to the Sun is how many times greater than the earth's diameter? \_\_\_\_\_
  - An atom's diameter is how many times smaller than the thickness of a sheet of paper? \_\_\_\_\_  
What word do we use for this number? \_\_\_\_\_
  - The distance to the farthest visible galaxy is how many times greater than a proton's radius? \_\_\_\_\_  
If you were to write this number as a whole number, how many commas would it have? \_\_\_\_\_
7. Use the attached Frayer Model worksheet to explore the concept *Order of Magnitude Estimating*.
8. Answers may be typed or neatly printed. Drawings may be freehand, but try to make use of the 'Shapes' or 'Insert Clipart' functions of MS Word. If you submit this assignment electronically, the filename must be in the following format, "LastnameFirstinitialPerXReadActX-X".

