**Answer the following questions on a separate sheet of paper.**

1. Write 2.5 x 104 in standard notation.
2. The population of Chicago, IL is about 2,710,000. Write the population in scientific notation.
3. Find the value of 9-3.
4. When changing 34,290,000 to scientific notation, how many places is the decimal point moved?
5. Let x be the first factor in an expression in scientific notation. What MUST be true about x?
6. What is the standard notation for a distance of 6.204 x 1011?
7. A number between 0 and 1 is written in scientific notation. What do we know MUST be true about the exponent?
8. What is the scientific notation for a length of 0.000000751?
9. Simplify the expression (8-6)2 + (9-6)3
10. A piece of paper is about 0.000213 meter thick. What is the thickness in scientific notation?
11. A distance of 6.5 x 10-4 is multiplied by 10. What is the result written in scientific notation?
12. A square yard has an area of 3600 square feet. How long is each side of the yard?
13. What kind of number is most likely to describe the number of goals scored in a soccer game?
14. Why is 26.2 x 104 not in scientific notation?
15. Write 4.63 x 105 in standard notation.
16. Fill in the blank to make the statement true. 67,000,000,000,000 = 6.7 x \_\_\_\_\_\_\_\_\_\_
17. Solve (6.4 x 103) + (5.2 x 104). Write your answer in scientific notation.
18. Round this population to two nonzero digits. Then write it in scientific notation. 149,856,000 people.
19. Change the length of 0.0000658 meter to scientific notation.
20. Write a diameter of 8.023 x 10-4 in standard notation.
21. Write a decimal between 0.0004 and 0.0005.
22. A small organism with the length of 8.6 x 10-5 meter tripled in size. Write the new length in standard notation.

Size (meters)

water molecule 2.2 × 1010

typical virus 6.5 × 108

small transistor 1.8 × 105

grain of salt 2.6 × 104

large ant 2.1 × 102

height of Mount Everest 8.8 × 103

diameter of the moon 3.8 × 106

diameter of the sun 1.6 × 109

1. How many zeros are needed to write the

diameter of the sun in standard notation

1. Write the diameter of the transistor in

standard notation

1. How many digits are there in the standard

notation for the height of Mt. Everest?

1. An object is 100 times greater than the grain

of salt. Describe the size of this object in

scientific notation.

1. Arrange the numbers in order from greatest to least. 4.3, π/5, √65, 35/15
2. Write your answer in scientific notation. (6.1 x 108) + (1.5 x 103)