Name_____ Date_____

Mrs. Roumbos 8R Period_____

# Scientific Notation

Scientific Notation is a shorthand way to write very large and very small numbers. A number in **Scientific Notation** is written as the product of two factors. The first factor (called a coefficient) is a number greater than or equal to 1 and less than 10. The second is a power of 10

**To Convert from Standard Form to Scientific Notation**

(1) Place the decimal point such that there is one non-zero digit to the left of the decimal point

(2) Count the number of decimal places the decimal has moved from the original number. This will be the exponent of 10.

(3) If the original number was less than 1, the exponent is negative, if the original number was more than 1, the exponent is positive.

Examples: Express the following in Scientific Notation:

1) 61, 500

2) 0.0000568

3) 321

4) 0.07085

5) 32,540

6) 0.00032

**To Convert from Scientific Notation to Standard Form**

(1) Move the decimal point to the right for a positive exponent of 10

(2) Move the decimal point to the left for a negative exponent of 10

Examples: Express the following in standard form:

1) $1.09 \times 10^{3}$

2) $3.078 \times 10^{-4}$

3) $4.22715 \times 10^{5}$

4) $9.004 \times 10^{-2}$

5) $5.6 \times 10^{6}$

6) $7.25 \times 10^{-3}$

Word Problems:

1) The sun is approximately 93, 000, 000 miles from earth. Write this distance in Scientific Notation.

2) A centimeter is exactly 0.00001 of a kilometer. Write this number in Scientific Notation.

3) The bee hummingbird of Cuba is the world's smallest bird. It weighs approximately 0.056oz. What is its weight written in Scientific Notation.