

Name Key

Date _____

Mrs. Roubos

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

$$\# \times 10^n$$

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
(in between first two non-zero numbers)
- (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 ^{Small #} exponent is negative, if the original number was more than 1, the ^{big #} exponent is positive.

Calc: (2nd) (DRG) (Σ) SCI (=)

Examples: Express the following in Scientific Notation:

1) 61,500

$$6.15 \times 10^4$$

2) 0.0000568

$$5.68 \times 10^{-5}$$

3) 321

$$3.21 \times 10^2$$

4) 0.07085

$$7.085 \times 10^{-2}$$

5) 32,540

$$3.254 \times 10^4$$

6) 0.00032

$$3.2 \times 10^{-4}$$

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

Calc: 2nd DRG ← FCO =

Examples: Express the following in standard form:

Use the △ button to put the exponents in the calc

1) 1.09×10^3 →

1,090

2) 3.078×10^{-4} ←

0.0003078

3) 4.22715×10^5 →

422,715

4) 9.004×10^{-2} ←

0.09004

5) 5.6×10^6

5,600,000

6) 7.25×10^{-3}

0.00725

Word Problems: SCI mode Calc: 2nd DRG → SCI =

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

9.3×10^7

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

1×10^{-5}

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.

5.6×10^{-2}