**Guided Notes**

*(SCIENTIFIC NOTATION)*

Scientific Notation: Use to write very \_\_\_\_\_\_\_\_\_\_\_\_ number and very \_\_\_\_\_\_\_\_\_\_number (more manageable)

Parts:

 Before the decimal point = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number

 After the decimal points = can be \_\_\_\_\_\_\_\_\_\_than 1 numbers (can be optional)

 Exponential number = the number of places the \_\_\_\_\_\_\_\_\_\_\_\_\_ is moved

**Change to Scientific Notation:**

 1. 1,234,400 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or  = 1.234400 \_\_\_\_\_\_\_\_\_\_\_

2. 0.1234400 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or = 1.234400 \_\_\_\_\_\_\_\_\_\_\_\_

3.0.0000123 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or = 1.234400 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Change to Standard Notation:**

1. 2.4 x 105 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 7.8 x 107 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 9.789 E3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 1.2 x 10-2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Rules for Scientific Notation in calculation**

* Exponents are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ values
* For addition and subtraction, all values must have the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exponents before calculations
* For multiplication, the first \_\_\_\_\_\_\_\_\_\_\_\_ of the numbers are multiplied and the exponents of 10 are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* For division, the first \_\_\_\_\_\_\_\_\_\_\_\_\_ of the numbers are divided and the exponent of 10 in the denominator is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the exponent of 10 in the numerator

**Do the Calculations**

Addition Example:

Problem: 6.2 x 104 + 7.2 x 103

Step 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_(Significant rule: can only have as many as the least significant figure to the right of the decimal)

Multiplication Example:

Problem: (3.1 x 103 )(5.01 x 104)

Step 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Significant rule: can only have as many as the least significant figure)

Division Example:

Problem: (7.63 x 103) / (8.6203 x 104)

Step 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Significant rule: can only have as many as the least significant figure)