CONCEPT: SCIENTIFIC NOTATION

Format for Scientific Notation

● **Scientific Notation**: used to turn small or large, inconvenient numbers into manageable ones.

$$6.88 \times 10^{-12}$$

□ **Coefficient**: The beginning part of value that is ≥ ____, but less than _____.

□ **Base**: The portion of the scientific notation value that is always 10.

□ **Exponent**: The number of places the decimal was moved to create the scientific notation value.

- Must be expressed as a whole number integer.

EXAMPLE: Which of the following scientific notation values is written correctly?

a) $1.25 \times 10^{-1/4}$ b) 0.00320×10^{-9} c) 5.220×10^{3} d) 7.3000×2^{7}

Scientific Notation to Standard Notation

● **Standard Notation**: The normal way of writing numbers.

□ A _____ exponent tells you to make the **coefficient** value larger.

7.17×10^{5} _____

□ A _____ exponent tells you to make the **coefficient** value smaller.

3.25×10^{-7} _____

PRACTICE: Convert the following scientific notation values into standard notation.

a) 1.25×10^{-4} b) 3.20×10^{-9} c) 1.6100×10^{4}

Standard Notation to Scientific Notation

● To convert a number into a scientific notation value, make sure the coefficient is ≥ ____, but less than _____ .

□ Increasing the coefficient value makes the exponent value decrease.

0.0000145 _____

□ Decreasing the coefficient value makes the exponent value increase.

101,325,000 _____

PRACTICE: Convert the following standard notation values into scientific notation.

a) 377,000 b) 0.000101 c) 707.82