SCIENTIFIC NOTATION: GUIDED NOTES

Standard Notation to Scientific Notation

Step 1) Find the first _____ digit and place the decimal after it.

Step 2) Count how many places the decimal moves to get back to the _____.

Step 3) Write the number as:

Step 4) Determine the exponent:

- If the number is _____ than 1, the exponent is _____.

- If the number is _____ than 1, the exponent is _____.

Significant Figures

Examples

Write the following numbers in scientific notation with two significant figures.

(a) 47,000

(b) 3,500,000

(c) 0.0059

(d) 0.000082

Scientific Notation to Standard Notation

Step 1) Look at the _____ of the 10.

Step 2) Move the decimal in the number:

- To the _____ if the exponent is positive.

- To the _____ if the exponent is negative.

Step 3) Add _____ if needed to fill in missing places.

Examples

Write the following numbers in standard notation with two significant figures.

(a) 9.4×10^{-3}

(b) 3.7×10^{-5}

(c) 2.6×10^{7}

(d) 1.5×10^{4}

Comparing Numbers in Scientific Notation

- Look at the _____ first.
  - The number with the _____ exponent is the greater number.

    ex.) 3.1×10^{5} ☐ 8.7×10^{3} **ex.)** 9.2×10^{-2} ☐ 2.4×10^{-6}

  - If the _____ are the same, compare the _____.
    The number with the _____ decimal is the greater number.

    ex.) 2.4×10^{5} ☐ 5.1×10^{5} **ex.)** 8.0×10^{-6} ☐ 1.3×10^{-6}

Watch out for negative exponents!

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