

Scientific Notation Study Guide

Name: _____

Period: _____

Answer each question before the end of the class period, use this paper as a study guide for tomorrow's Quest.

1.) Describe in your own words why we use scientific notation?

2.) If you were to change a number in Scientific Notation, which number would indicate the number of places you will move the decimal? The Multiplier OR The Exponent

3.) **Fill in the Blank:** If a number has a _____ exponent, move it to the right to change it into standard form. If the number has a negative exponent, move it to the _____ to change it into standard form.

Solve: Change each number into Scientific Notation

4.) 360,000

5.) .0008512

Solve: Write each number in Standard Form

6.) 7.395×10^2

7.) 1.25×10^{-5}

8.) **Fill in the Blank:** When adding or subtracting numbers in scientific notation, first choose the number with the _____ exponent. Next, convert each number to have the same exponent by moving the decimal to the _____.

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Solve each addition and subtraction problem. Show your Work.
Write the final answer in Scientific Notation.

9.) $(6 \times 10^6) - (5 \times 10^5)$

10.) $(2 \times 10^5) + (8 \times 10^4) + (8.28 \times 10^5)$

11.) $(3.62 \times 10^{-2}) + (7.8 \times 10^{-5})$

12.) **Fill in the Blank:** When Multiplying numbers in scientific notation, first use the _____ Rule of Exponents. Next, add your exponents and _____ your multipliers. If needed, change your number into scientific notation.

13.) When Dividing numbers in scientific notation, first use the Quotient Rule of Exponents. Next, _____ your exponents and _____ your multipliers. If needed, change your answer into scientific notation.

14.) **Circle the correct choice:** When changing numbers into scientific notation, move the decimal to the right and then (add/subtract) the number of places you moved the decimal, to the exponent.

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15.) When changing numbers into scientific notation, if moving the decimal to the (left/right), subtract the number of places you moved the decimal, to the exponent.

Solve: Show your work and be sure to write your final answer in Scientific Notation.

16.) $(7.1 \times 10^{-5})(6.7 \times 10^{-6})$

17.) $\frac{(1.6 \times 10^6)}{(4 \times 10^6)}$

18.) **Be prepared to solve at least one word problem:**

When the Sun makes an orbit around the center of the Milky Way, it travels 2.025×10^{14} kilometers. The orbit takes 225 million years. At what rate does the Sun travel? Write your answer in scientific notation. (Hint: use formula Rate = distance / time)