

Scientific Notation Study Guide



Name: _____

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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?

They use it because they have to reduce it because they will get a answer like this: 2.4e80 they use it so u don't have a e in there

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 Decimal exponent, move it to the right to change it into standard form. If the number has a negative exponent, move it to the The Multiplier OR The Exponent to change it into standard form.

Solve: Change each number into Scientific Notation

4.) 360,000

3.6

5.) .0008512

8.512 x 10⁻⁴

Solve: Write each number in Standard Form

6.) 7.395×10^2

739.5

7.) 1.25×10^{-5}

.125

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

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

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

Handwritten work for problem 9: $6 \times 10^6 - 5 \times 10^5 = 1.0 \times 10^6$. The numbers 6 and 5 are written above the terms, and the result 1.0×10^6 is circled.

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

Handwritten work for problem 10: $2 \times 10^5 + 8 \times 10^4 + 8.28 \times 10^5 = 1.108 \times 10^6$. The result 1.108×10^6 is circled.

11.) $(3.62 \times 10^{-2}) + (7.8 \times 10^{-5}) = 0.036228$

12.) **Fill in the Blank:** When Multiplying numbers in scientific notation, first use the Exponent Rule of Exponents. Next, add your exponents and Add 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, Add your exponents and Subtract 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.) $(7.1 \times 10^{-5})(6.7 \times 10^{-6})$

$.71$

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

7.6

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)

2.75×10^3