Adding And Subtracting Scientific Notation Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the general form of a number expressed in scientific notation?

undefined. a) a × 10^n ✓

undefined. b) a + 10^n

undefined. c) a - 10^n

undefined. d) a / 10^n

The general form of a number in scientific notation is expressed as a coefficient multiplied by 10 raised to an exponent.

Which of the following are true about the coefficient in scientific notation?

undefined. a) It must be greater than or equal to 1. ✓

undefined. b) It must be less than 10. ✓

undefined. c) It can be any integer.

undefined. d) It can be negative.

The coefficient in scientific notation must be greater than or equal to 1 and less than 10.

Explain why scientific notation is useful in scientific calculations.

Scientific notation is useful because it allows for the representation of very large or very small numbers in a compact form, making calculations easier and reducing the risk of errors.

List two fields where scientific notation is commonly used.

1. Field 1

Physics

2. Field 2

Chemistry

Scientific notation is commonly used in fields such as physics and chemistry, as well as in engineering and astronomy.

Part 2: Understanding and Interpretation

When adding numbers in scientific notation, what must be true about the exponents?

undefined. a) They must be different.

undefined. b) They must be the same. ✓

undefined. c) One must be zero.

undefined. d) They must be negative.

When adding numbers in scientific notation, the exponents must be the same.

Which steps are necessary to add 3.2 × 10^4 and 5.1 × 10^5?

undefined. a) Adjust the exponents to be the same. ✓

undefined. b) Add the coefficients directly.

undefined. c) Convert to decimal form first.

undefined. d) Keep the exponent of the larger number.

To add these numbers, you need to adjust the exponents to be the same and then add the coefficients.

Describe the process of converting a number from decimal form to scientific notation.

To convert a number from decimal form to scientific notation, you move the decimal point to create a coefficient between 1 and 10 and adjust the exponent accordingly.

Part 3: Application and Analysis

What is the result of adding 2.5 × 10^3 and 3.5 × 10^3?

undefined. a) 6.0 × 10^3 ✓

undefined. b) 6.0 × 10^6
undefined. c) 6.0 × 10^2
undefined. d) 6.0 × 10^4

The result of adding these two numbers is 6.0 × 10^3.

If you have 4.0 × 10^6 and 2.0 × 10^5, what steps would you take to subtract them?

undefined. a) Adjust the exponents to be the same. ✓
undefined. b) Subtract the coefficients.
undefined. c) Keep the exponent of the larger number.
undefined. d) Add the coefficients.

To subtract these numbers, you need to adjust the exponents to be the same and then subtract the coefficients.

Solve: Subtract 7.8 × 10^2 from 1.2 × 10^3 and express the answer in scientific notation.

The result of the subtraction is 4.2 × 10^2.

Part 4: Evaluation and Creation

What is the main reason for converting a number like 0.00056 into scientific notation?

undefined. a) To make it larger.
undefined. b) To simplify calculations. ✓
undefined. c) To make it a whole number.
undefined. d) To change its value.

The main reason for converting to scientific notation is to simplify calculations and make the number easier to read.

Which expression is a valid scientific notation for the number 0.00078?

undefined. a) 7.8 × 10^{-4} ✓
undefined. b) 7.8 × 10^4
undefined. c) 78 × 10^{-5}
undefined. d) 0.78 × 10^{-3}

The valid scientific notation for 0.00078 is 7.8 × 10^(-4).

Evaluate the following statements about scientific notation and select the correct ones:

undefined. a) It simplifies multiplication and division of large numbers. ✓

undefined. b) It is only used for numbers greater than 1,000.

undefined. c) It is used to represent very small numbers efficiently. ✓

undefined. d) It is not suitable for financial calculations.

The correct statements are that scientific notation simplifies multiplication and division of large numbers and is used to represent very small numbers efficiently.

Create a real-world problem that involves adding or subtractING numbers in scientific notation, and solve it.

An example problem could involve calculating distances in space or measuring small quantities in chemistry.