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Reading and Writing Scientific Notation

Converting to Scientific Notation

$$n \times 10^a \quad 1 \leq n < 10$$

5,120 000 000 000 000 000 000 000 000

30

$$5.12 \times 10^{30}$$

- 1 Describe the definition of scientific notation.
- 2 Explain how to write numbers in scientific notation.
- 3 Write the given numbers in scientific notation.
- 4 Examine how the numbers are written in scientific notation.
- 5 Write the following numbers in scientific notation.
- 6 Determine the standard form of the number given in scientific notation.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



Describe the definition of scientific notation.

Fill in the blanks.

fraction

factor

product

sum

summand

numerator

exponent

denominator

coefficient

base

Scientific Notation

$$n \times 10^a$$

Diagram illustrating the components of scientific notation $n \times 10^a$. Three boxes are connected to the expression by lines:

- Box 1 (labeled 1) points to the coefficient n .
- Box 2 (labeled 2) points to the base 10 .
- Box 3 (labeled 3) points to the exponent a .



Hints for solving these problems

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of 6

Describe the definition of scientific notation.

Hint #1

$$t^a = \underbrace{t \times t \times \dots \times t}_{a \text{ times}}$$

In the following picture, we see t is raised by the power of a .

t is the base and a is the exponent.

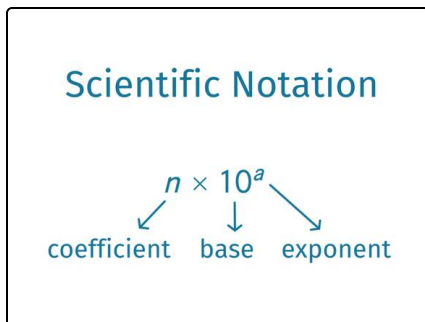


Answers and detailed answer explanations for these problems

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of 6

Describe the definition of scientific notation.

Answer key: 1: coefficient // 2: base // 3: exponent



Scientific notation allows us to write very big or very small numbers in an easy to read and easy to understand way.

A number written in scientific notation looks like $n \times 10^a$, where:

- The coefficient n must be greater than or equal to 1 and less than 10.
- The sign of the exponent a is positive when a number is very big, or negative when a number is very small.