

10.5

Reading Scientific Notation

Evaluate the expression.

1. 10^3

2. 10^{-4}

3. 10^5

4. 10^{-2}

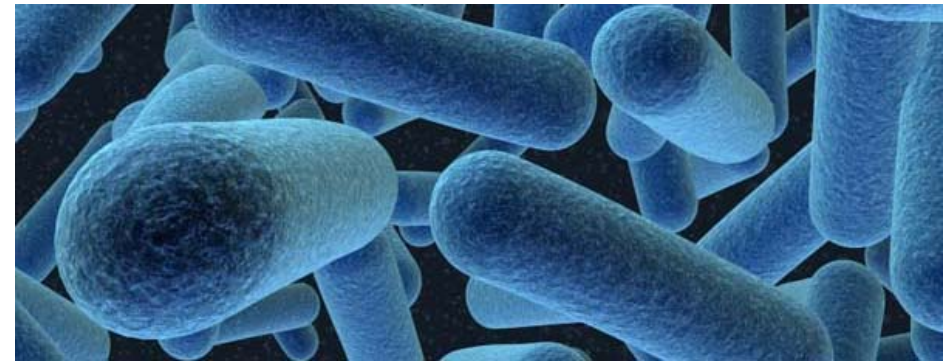
5. 10^{10}

6. 10^{-5}



Distance from Earth to the Sun

150,000,000 km



Size of Bacterium

0.00000625 cm

Scientific Notation

This is way of writing very big or small numbers in an easier way.

150

1,500

15,000

Scientific Notation

A number is expressed in scientific notation when it is in the form

where a is _____
and n is an _____.

Tell whether the number is written in scientific notation. Explain.

a. 5.9×10^{-6}

b. 0.9×10^8

Scientific Notation

This is way of writing very big or small numbers in an easier way.

150,000,000

Something you should know...

The relationship between decimals and negative exponents....

.1

.01

.001

Something you should know...

The relationship between decimals and negative exponents....

.0001

.00001

Scientific Notation

This is way of writing very big or small numbers in an easier way.

.062

.0062

.00062

Scientific Notation

This is way of writing very big or small numbers in an easier way.

0.0000625

Standard Form

Write the following in standard form:

- 1) 2.5×10^3
- 2) 3.94×10^{-4}
- 3) 6.47×10^6
- 4) 7.83×10^{-7}
- 5) 2.5×10^2

6) a. Write 3.22×10^{-4} in standard form.

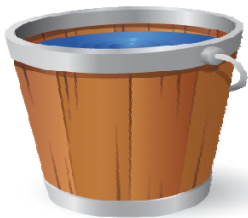
b. Write 7.9×10^5 in standard form.

7) An object with a lesser density than water will float. An object with a greater density than water will sink. Use each given density (in kilograms per cubic meter) to explain what happens when you place a brick and an apple in water.

Water: 1.0×10^3

Brick: 1.84×10^3

Apple: 6.41×10^2



8)



A dog has 100 female fleas. How much blood do the fleas consume per day?

A female flea consumes about 1.4×10^{-5} liter of blood per day.

Scientific Notation

Write the following in scientific notation:

- 9) 64,830,000,000,000
- 10) 0.000000000089
- 11) 118,000,000,000,000
- 12) 0.0000000000000025
- 13) 67

- 14) A large corporation purchased a video-sharing website for \$1,650,000,000. Write this number in scientific notation.

- 15) The 2004 Indonesian earthquake slowed the rotation of Earth, making the length of a day 0.00000268 second shorter. Write this number in scientific notation.

16)



An album has sold 3,780,000 copies. How many more copies does it need to sell to receive the award?

An album receives an award when it sells 10,000,000 copies.

- 17) The table shows when the last three geologic eras began. Order the eras from earliest to most recent.



Era	Began
Paleozoic	5.42×10^8 years ago
Cenozoic	6.55×10^7 years ago
Mesozoic	2.51×10^8 years ago