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Operations with Numbers in Scientific Notation

95 foxes

$95 = 9.5 \times 10^1$

$= \frac{9.5}{3.8} \times 10^{-1}$

$= 2.5 \times 10^{-1}$

$3.8 \times 10^2 \text{ m}^2$

- 1 **Decide which numbers are written in scientific notation.**
- 2 Calculate the fox population of Mr. and Mrs. Fox's village.
- 3 Find the fox density of the town.
- 4 Determine the fox population in Norway.
- 5 Examine the different population densities.
- 6 Complete the following operations using 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.



Decide which numbers are written in scientific notation.

Choose the correct notation.

A number written in scientific notation looks like

$$n \times 10^a,$$

with the coefficient n , where n has to be greater than or equal to 1 and less than 10, base 10 and exponent a .

A

$$7.5 \times 10^2$$

B

$$75.0 \times 10$$

C

$$24$$

D

$$2.4 \times 10^1$$

E

$$95$$

F

$$3.2 \times 10^2$$



Hints for solving these problems

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Decide which numbers are written in scientific notation.

Hint #1

Keep the definition of scientific notation above in mind.

Hint #2

The number 2016 written in scientific notation is

$$2016 = 2.016 \times 10^3.$$



Answers and detailed answer explanations for these problems

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Decide which numbers are written in scientific notation.

Answer key: A, D, F

The fox density is given by 750 foxes / mi^2 .

To write 750 , or 750.0 , in scientific notation, we move the decimal place over two to the left to get $750 = 7.5 \times 10^2$.

Remember that we do this as n must be greater than or equal to 1 and less than 10 .

The area of the village, 3.8×10^3 , is already given in scientific notation.

We can also write $7.5 \times 3.8 = 24$ in scientific notation: $24 = 2.4 \times 10^1$.