

Review from Grade 8: Perfect Squares

What is a perfect square?

There are other ways to ask the same question...

- What is the square of 3?
- What is 3 squared?
- What is 3 to the power of 2?

We can sketch a diagram of perfect squares, by actually drawing squares.

A perfect square can be considered an area and the side lengths are the length and width (also known as factors).

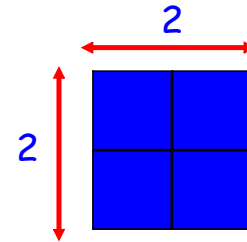
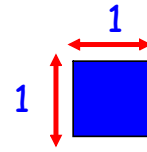
$$\text{Area of a Square} = \text{Length} \times \text{Width}$$

Example 1

Can a rectangle be used to represent a perfect square number?

The List of Perfect Squares from 1 to 20

$$\begin{aligned} 1^2 &= 1 \times 1 = \\ 2^2 &= 2 \times 2 = \\ 3^2 &= 3 \times 3 = \\ 4^2 &= 4 \times 4 = \\ 5^2 &= 5 \times 5 = \\ 6^2 &= 6 \times 6 = \\ 7^2 &= 7 \times 7 = \\ 8^2 &= 8 \times 8 = \\ 9^2 &= 9 \times 9 = \\ 10^2 &= 10 \times 10 = \\ 11^2 &= 11 \times 11 = \\ 12^2 &= 12 \times 12 = \\ 13^2 &= 13 \times 13 = \\ 14^2 &= 14 \times 14 = \\ 15^2 &= 15 \times 15 = \\ 16^2 &= 16 \times 16 = \\ 17^2 &= 17 \times 17 = \\ 18^2 &= 18 \times 18 = \\ 19^2 &= 19 \times 19 = \\ 20^2 &= 20 \times 20 = \end{aligned}$$



When a number is multiplied by itself, the result is a perfect square.

What is the Inverse operation of squaring a number ?

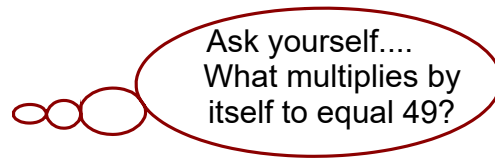
Note

Inverse operation of + is

Inverse operation of \times is

Example 1

What is $\sqrt{49}$?



Note:

Every perfect square number has two square roots, one negative and one positive. However, we will only be finding the principal, or positive, square root.

Practice Questions

a) $\sqrt{64}$

b) $\sqrt{121}$

c) $\sqrt{81}$

d) $\sqrt{196}$

e) 9^2

f) 20^2

g) What is 4 squared?

h) What is the square of 4?

i) What is the square root of 4?

j) The area of a square is 25 cm^2 , what is the side length of the square?

k) The side length of a square is 13 cm, what is the area of the square?

CHALLENGE QUESTION

If the area of a square is 100 cm^2 , what is the perimeter of the square?