



Find-The Square Root:

√-Square Root

PERFECT SQUARES AND THEIR ROOTS		
$1^2 = 1$	$11^2 = 121$	$21^2 = 441$
$2^2 = 4$	$12^2 = 144$	$22^2 = 484$
$3^2 = 9$	$13^2 = 169$	$23^2 = 529$
$4^2 = 16$	$14^2 = 196$	$24^2 = 576$
$5^2 = 25$	$15^2 = 225$	$25^2 = 625$
$6^2 = 36$	$16^2 = 256$	$26^2 = 676$
$7^2 = 49$	$17^2 = 289$	$27^2 = 729$
$8^2 = 64$	$18^2 = 324$	$28^2 = 784$
$9^2 = 81$	$19^2 = 361$	$29^2 = 841$
$10^2 = 100$	$20^2 = 400$	$30^2 = 900$

Square Root of $x = \sqrt{x} = x^{\frac{1}{2}}$

$$\sqrt{x} = \sqrt{(y \times y)} = y$$

where

y is the square root of any number x

Square Root Formula

The square root formula of a number, x is given as,

$$\sqrt{x} = x^{1/2}$$

Suppose, x is any number such that, $x = y \times y$, the formula to calculate the square root of x will be,

$$\sqrt{x} = \sqrt{(y \times y)} = y$$

where, y is the square root of any number x . This also means that if the value of y is an integer, then x would be a perfect square.

Math.sqrt(number) :

The `Math.sqrt()` function returns the square root of a number.

Example-1

```
console.log(Math.sqrt(5));  
//Output: 25
```

Example-2

```
const calculate = (a,b) => {  
  return (Math.sqrt((a*a) + (b*b) ));  
}  
console.log(calculate(3,4));  
//Output: 5
```

JavaScript ES6
([known limitations](#))

```

1  const calculate = (a,b) => {
2    return (Math.sqrt((a*a) + (b*b) ));
3  }
4  console.log(calculate(3,4));
5  //Output: 5

```

[Edit this code](#)

→ line that just executed

→ next line to execute

<< First

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Last >>

Step 4 of 5

Print output (drag lower right corner to resize)

Frames

Objects

Global frame

calculate

(a,b) => {
 return (Math.sqrt((a*a) + (b*b)));
}

a

3

b

4

Return value

5

Example-3 Square Root of Different Data Types

```

const num1 = 2.25;
const num2 = -4;
const num3 = 'hello';

const result1 = Math.sqrt(num1);
const result2 = Math.sqrt(num2);
const result3 = Math.sqrt(num3);

console.log(`The square root of ${num1} is ${result1}`);
console.log(`The square root of ${num2} is ${result2}`);
console.log(`The square root of ${num3} is ${result3}`);
/*Output:
The square root of 2.25 is 1.5
The square root of -4 is NaN
The square root of hello is NaN
*/

```

JavaScript ES6
([known limitations](#))

```
1 const num1 = 2.25;
2 const num2 = -4;
3 const num3 = 'hello';
4
5 const result1 = Math.sqrt(num1);
6 const result2 = Math.sqrt(num2);
7 const result3 = Math.sqrt(num3);
8
9 console.log(`The square root of ${num1} is ${result1}`)
10 console.log(`The square root of ${num2} is ${result2}`)
→ 11 console.log(`The square root of ${num3} is ${result3}`)
```

←

▶

[Edit this code](#)

→ line that just executed

→ next line to execute

Print output (drag lower right corner to resize)

The square root of 2.25 is 1.5
The square root of -4 is NaN
The square root of hello is NaN

Frames

Objects

Global frame

num1	2.25
num2	-4
num3	"hello"
result1	1.5
result2	NaN
result3	NaN

- 0 sqrt is 0
- -1 or - value sqrt is NaN
- string sqrt is NaN