JavaScript Math Object

The JavaScript Math object allows you to perform mathematical tasks on numbers.

Math.round()

`Math.round(x)` returns the value of x rounded to its nearest integer:

Math.pow()

`Math.pow(x, y)` returns the value of x to the power of y:

Math.sqrt()

`Math.sqrt(x)` returns the square root of x:

Math.abs()

`Math.abs(x)` returns the absolute (positive) value of x:

Math.ceil()

`Math.ceil(x)` returns the value of x rounded **up** to its nearest integer:

Math.floor()

`Math.floor(x)` returns the value of x rounded **down** to its nearest integer:

Math.sin()

`Math.sin(x)` returns the sine (a value between -1 and 1) of the angle x (given in radians).

If you want to use degrees instead of radians, you have to convert degrees to radians:

Angle in radians = Angle in degrees x PI / 180.

Math.cos()

`Math.cos(x)` returns the cosine (a value between -1 and 1) of the angle x (given in radians).

If you want to use degrees instead of radians, you have to convert degrees to radians:

Angle in radians = Angle in degrees x PI / 180.

Math.min() and Math.max()

`Math.min()` and `Math.max()` can be used to find the lowest or highest value in a list of arguments:

Math.random()

`Math.random()` returns a random number between 0 (inclusive), and 1 (exclusive):

You will learn more about `Math.random()` in the next chapter of this tutorial.

Math Properties (Constants)

JavaScript provides 8 mathematical constants that can be accessed with the Math object:

Example

Math.E Math.PI Math.SQRT2 Math.SQRT1_2 Math.LN2 Math.LN10 Math.LOG2E Math.LOG10E

Try it Yourself »

Math Constructor

Unlike other global objects, the Math object has no constructor. Methods and properties are static.

All methods and properties (constants) can be used without creating a Math object first.

Math Object Methods

Method	Description
abs(x)	Returns the absolute value of x
acos(x)	Returns the arccosine of x, in radians
asin(x)	Returns the arcsine of x, in radians
atan(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians
atan2(y, x)	Returns the arctangent of the quotient of its arguments
ceil(x)	Returns the value of x rounded up to its nearest integer
cos(x)	Returns the cosine of x (x is in radians)
exp(x)	Returns the value of E^x
floor(x)	Returns the value of x rounded down to its nearest integer
log(x)	Returns the natural logarithm (base E) of x
max(x, y, z, ..., n)	Returns the number with the highest value
min(x, y, z, ..., n)	Returns the number with the lowest value
pow(x, y)	Returns the value of x to the power of y
random()	Returns a random number between 0 and 1
round(x)	Returns the value of x rounded to its nearest integer
sin(x)	Returns the sine of x (x is in radians)
sqrt(x)	Returns the square root of x
tan(x)	Returns the tangent of an angle

Complete Math Reference

For a complete reference, go to our complete Math object reference.

The reference contains descriptions and examples of all Math properties and methods.
