

C Library - <math.h>

The **math.h** header defines various mathematical functions and one macro. All the functions available in this library take **double** as an argument and return **double** as the result.













Library Macros





There is only one macro defined in this library –

Sr.No.	Macro & Description
1	<p>HUGE_VAL</p> <p>This macro is used when the result of a function may not be representable as a floating point number. If magnitude of the correct result is too large to be represented, the function sets errno to ERANGE to indicate a range error, and returns a particular, very large value named by the macro HUGE_VAL or its negation (- HUGE_VAL).</p> <p>If the magnitude of the result is too small, a value of zero is returned instead. In this case, errno might or might not be set to ERANGE.</p>

Library Functions

Following are the functions defined in the header math.h –

Sr.No.	Function & Description
1	double acos(double x)  Returns the arc cosine of x in radians.
2	double asin(double x)  Returns the arc sine of x in radians.
3	double atan(double x)  Returns the arc tangent of x in radians.
4	double atan2(double y, double x)  Returns the arc tangent in radians of y/x based on the signs of both values to determine the correct quadrant.
5	double cos(double x)  Returns the cosine of a radian angle x.
6	double cosh(double x)  Returns the hyperbolic cosine of x.
7	double sin(double x)  Returns the sine of a radian angle x.
8	double sinh(double x)  Returns the hyperbolic sine of x.
9	double tanh(double x)  Returns the hyperbolic tangent of x.
10	double exp(double x)  Returns the value of e raised to the xth power.
11	double frexp(double x, int *exponent)  The returned value is the mantissa and the integer pointed to by exponent is the exponent. The resultant value is $x = \text{mantissa} * 2^{\text{exponent}}$.
12	double ldexp(double x, int exponent)  Returns x multiplied by 2 raised to the power of exponent.

13	<code>double log(double x)</code>  Returns the natural logarithm (base-e logarithm) of x .
14	<code>double log10(double x)</code>  Returns the common logarithm (base-10 logarithm) of x .
15	<code>double modf(double x, double *integer)</code>  The returned value is the fraction component (part after the decimal), and sets integer to the integer component.
16	<code>double pow(double x, double y)</code>  Returns x raised to the power of y .
17	<code>double sqrt(double x)</code>  Returns the square root of x .
18	<code>double ceil(double x)</code>  Returns the smallest integer value greater than or equal to x .
19	<code>double fabs(double x)</code>  Returns the absolute value of x .
20	<code>double floor(double x)</code>  Returns the largest integer value less than or equal to x .
21	<code>double fmod(double x, double y)</code>  Returns the remainder of x divided by y .