`math` – mathematical functions

This module implements a subset of the corresponding CPython module, as described below. For more information, refer to the original CPython documentation: `math`.

The `math` module provides some basic mathematical functions for working with floating-point numbers.

Note: On the pyboard, floating-point numbers have 32-bit precision.

Availability: not available on WiPy. Floating point support required for this module.

Functions

`math.acos`(*x*)

Return the inverse cosine of `x`.

`math.acosh`(*x*)

Return the inverse hyperbolic cosine of `x`.

`math.asin`(*x*)

Return the inverse sine of `x`.

`math.asinh`(*x*)

Return the inverse hyperbolic sine of `x`.

`math.atan`(*x*)

Return the inverse tangent of `x`.

`math.atan2`(*y*, *x*)

Return the principal value of the inverse tangent of `y/x`.

`math.atanh`(*x*)

Return the inverse hyperbolic tangent of `x`.

`math.ceil`(*x*)

Return an integer, being `x` rounded towards positive infinity.

`math.copysign`(*x*, *y*)

Return `x` with the sign of `y`.

`math.cos`(*x*)

Return the cosine of `x`.

`math.cosh`(*x*)

Return the hyperbolic cosine of `x`.

`math.degrees`(*x*)

Return radians `x` converted to degrees.

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math.erf(*x*)

Return the error function of `x`.

math.erfc(*x*)

Return the complementary error function of `x`.

math.exp(*x*)

Return the exponential of `x`.

math.expm1(*x*)

Return `exp(x) - 1`.

math.fabs(*x*)

Return the absolute value of `x`.

math.floor(*x*)

Return an integer, being `x` rounded towards negative infinity.

math.fmod(*x*, *y*)

Return the remainder of `x/y`.

math.frexp(*x*)

Decomposes a floating-point number into its mantissa and exponent. The returned value is the tuple `(m, e)` such that `x == m * 2**e` exactly. If `x == 0` then the function returns `(0.0, 0)`, otherwise the relation `0.5 <= abs(m) < 1` holds.

math.gamma(*x*)

Return the gamma function of `x`.

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math.isfinite(*x*)

Return `True` if `x` is finite.

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math.isinf(*x*)

Return `True` if `x` is infinite.

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math.isnan(*x*)

Return `True` if `x` is not-a-number

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math.ldexp(*x*, *exp*)

Return `x * (2**exp)`.

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math.lgamma(*x*)

Return the natural logarithm of the gamma function of `x`.

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math.log(*x*)

Return the natural logarithm of `x`.

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math.log10(*x*)

Return the base-10 logarithm of `x`.

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math.log2(*x*)

Return the base-2 logarithm of `x`.

`math.modf(x)`

Return a tuple of two floats, being the fractional and integral parts of `x`. Both return values have the same sign as `x`.

`math.pow(x, y)`

Returns `x` to the power of `y`.

`math.radians(x)`

Return degrees `x` converted to radians.

`math.sin(x)`

Return the sine of `x`.

`math.sinh(x)`

Return the hyperbolic sine of `x`.

`math.sqrt(x)`

Return the square root of `x`.

`math.tan(x)`

Return the tangent of `x`.

`math.tanh(x)`

Return the hyperbolic tangent of `x`.

math.trunc(*x*)

Return an integer, being `x` rounded towards 0.

Constants

math.e

base of the natural logarithm

math.pi

the ratio of a circle's circumference to its diameter