

Math-c Documentation

Trigonometric and hyperbolic functions

The input values for these functions can be a scalar, vector or matrix; in case of vector and matrix the function execute for each element, including nested matrix.

$$y = \text{acos}(x)$$

Arc cosine

x -> value in range [-1 +1]

returns

y -> arc cosine in radians, if x is out of range then the function return (nan)

$$y = \text{acosh}(x)$$

Arc hyperbolic cosine

x -> value in range [1 ∞]

returns

y -> arc hyperbolic cosine, if x is out of range then the function return (nan)

$$y = \text{asin}(x)$$

Arc sine

x -> value in range [-1 +1]

returns

y -> arc sine in radians, if x is out of range then the function return (nan)

$$y = \text{asinh}(x)$$

Arc hyperbolic sine

x -> value in range [1 ∞]

returns

y -> arc hyperbolic sine in radians, if x is out of range then the function return (nan)

$$y = \text{atan}(x)$$

Arc tangent

x -> value

returns

y -> arc tangent in radians in range $[-\pi/2 \pi/2]$

$$y = \text{atan2}(a,b)$$

arc tangent with two parameters, calculates the arc tangent of a/b using the signs of both parameters to set the correct quadrant

a -> value

b -> value

returns

y -> arc tangent in radians

$$y = \text{atanh}(x)$$

Arc hyperbolic tangent

x -> value in range $[-1 +1]$

returns

y -> arc hyperbolic tangent in radians, if x is out of range then the function return (nan)

$$y = \text{cos}(x)$$

cosine

x -> value in radians

returns

y -> cosine, range $[-1 1]$

$$y = \cosh(x)$$

hyperbolic cosine

x -> value in radians

returns

y -> hyperbolic cosine

$$y = \sin(x)$$

sine

x -> value in radians

returns

y -> sine, range [-1 1]

$$y = \sinh(x)$$

hyperbolic sine

x -> value in radians

returns

y -> hyperbolic sine

$$y = \tan(x)$$

tangent

x -> value in radians

returns

y -> tangent

$$y = \tanh(x)$$

hyperbolic tangent

x -> value in radians

returns

y -> hyperbolic tangent