**th**

*Function of calculating hyperbolic tangent of real or complex number.*

**Syntax:**

*y* **= th***(x);*

**Arguments:**

*x* – input value.

**Description:**

*th(x)* – function of calculating hyperbolic tangent of real or complex number.

Input value can be both real and complex number.

Input value can be assigned either as a preliminarily determined variable, or as a constant number.

A complex number shall be assigned by the expression *a*+*b*i, where *a* and *b* are real and virtual number parts, accordingly.

**Result:**

*y* – hyperbolic sine of input value *x*.

**Example 1:**

*Hyperbolic sine* *of real number*

|  |  |
| --- | --- |
|  | **const** x = 5;  y = **th**(x); |

As a result, variable *y* will be assigned value 0.9999092.

**Example 2:**

*Hyperbolic sine* *of complex number*

|  |  |
| --- | --- |
|  | y = **th**(3+4i); |

As a result, variable *y* will be assigned value 1.0007095+0.0049082581i.