**rms**

*Function of calculation of mean-square deviation of vector elements.*

**Syntax:**

*y* = **rms***(X);*

**Arguments:**

*X* – input array containing vector elements.

**Description:**

*rms(X)* – function returns the mean-square deviation of a random value, whose distribution is presented by elements of input vector *X*:

,

where  is arithmetic mean.

Elements of vector *X* shall be real numbers.

The input array *X* can be assigned:

* as variable of array type determined earlier:

*y* = **rms**(*X*);

* as array consisting of variables determined earlier:

*y* = **rms**([*x1,x2,x3,x4*]);

* as constant array:

*y* = **rms**([0,0,2,1,0])*;*

**Result:**

*y* – mean-square deviation of a random value, whose distribution is presented by elements of input vector *X*.

**Example:**

|  |  |
| --- | --- |
|  | **const** X = [2, 2, 1, 3, 4];  y = **rms**(X); |

As a result, value 1.1401754 that is the mean-square deviation of the random value, whose distribution is presented by elements of input vector *X*, will be assigned to variable *y*.