**sortby**

*Sorting vectors by increasing values of determinative vector.*

**Syntax:**

**sortby***(X, Y1, Y2,..,Yn);*

**Arguments:**

*Х* – input array comprising elements of sorted-out vector, which determine sorting of the next vectors,

*Y1,..,Yn* – input arrays comprising elements following the determinative vector of sorted-out vectors.

**Description:**

*sortby (X, Y1, Y2 ,..,Yn)* – multiplicity of vectors is being sorted out by increasing values of the first one (i.е. the first indicated vector is determinative, while the elements of the rest are permutated according to the order of permutation of elements of the first one). The sorting for complex vectors takes place by the modules of numbers.

Input arrays *X, Y1, Y2,..,Yn* can be assigned:

* as variable of array type determined earlier:

**sortby**(*X, Y1, Y2,..,Yn*);

* as array consisting of variables determined earlier:

**sortby**([*x1,x2,x3,x4*], *Y1, Y2,..,Yn*);

* as constant array:

**sortby**([0,0,2,1,0], *Y1, Y2,..,Yn*);

**Example 1:**

|  |  |
| --- | --- |
|  | X = [2, 3, 1];  Y = [7, 0, 4];  **sortby**(X, Y); |

As a result, elements of array *X* will be assigned values [1, 2, 3] corresponding to original array *X* elements sorted out by increasing, elements of array *Y* will be assigned values [4, 7, 0] corresponding to original array *Y* elements sorted out in accordance with sorting determinative array.

**Example 2:**

|  |  |
| --- | --- |
|  | X = [2, 3, 1];  Y1 = [7, 0, 4];  Y2 = [5, 2, 7];  Y3 = [-1, 0, 8];  **sortby**(X, Y1, Y2, Y3); |

As a result, elements of array *X* will be assigned values [1, 2, 3] corresponding to original array *X* elements sorted out by increasing, elements of arrays *Y1, Y2, Y3* will be assigned values [4, 7, 0], [7, 5, 2], [8, -1, 0], accordingly, corresponding to elements of original arrays *Y1, Y2, Y3* sorted out in accordance with sorting determinative array.