**logspace**

*Function of calculating vector of arithmetic progression in logarithmic scale.*

**Syntax:**

Y =**logspace***(xmin*,*xmax*, *n);*

**Arguments:**

хmin – minimum value of arithmetic progression,

*xmax* – maximum value of arithmetic progression,

*n* – dimensionality of vector of arithmetic progression.

**Description:**

*logspace(xmin ,xmax, n)* – function of calculating vector of arithmetic progression in logarithmic scalefrom value *xmin* to value *xmax*. Quantity of elements of arithmetic progression is determined by parameter *n*. As a result, vector is being shaped, which comprises elements with values from 10^*xmin* to 10^*xmax*.

The vector of arithmetic progression in linear scalefrom value *xmin* to value *xmax* is calculated by dimension *n* by means of function *linspace (xmin ,xmax, n)*.

**Result:**

*Y* – output array comprising vector elements with values from 10^*xmin* to 10^*xmax*, where numbers from *xmin* to *xmax* are the values of arithmetic progression.

**Example:**

|  |  |
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|  | **const**n=81;  **output** x[n];  **output** y[n];  minimum = 20;  maximum = 260;  y = **linspace**(minimum, maximum, n);  x = **logspace**(minimum, maximum, n); |

As a result elements of array *y* will be assigned values [20, 23, 26,…, 257, 260] corresponding to the values of arithmetic progression, array dimensionality equals 81 elements. Elements of array *x* will be assigned values [1e20, 1e23, 1e26,…, le257, 1e260], where a degree corresponds to the values of arithmetic progression, array dimensionality equals 81 element.

An exact value of obtained array *y* = [20 , 23 , 26 , 29 , 32 , 35 , 38 , 41 , 44 , 47 , 50 , 53 , 56 , 59 , 62 , 65 , 68 , 71 , 74 , 77 , 80 , 83 , 86 , 89 , 92 , 95 , 98 , 101 , 104 , 107 , 110 , 113 , 116 , 119 , 122 , 125 , 128 , 131 , 134 , 137 , 140 , 143 , 146 , 149 , 152 , 155 , 158 , 161 , 164 , 167 , 170 , 173 , 176 , 179 , 182 , 185 , 188 , 191 , 194 , 197 , 200 , 203 , 206 , 209 , 212 , 215 , 218 , 221 , 224 , 227 , 230 , 233 , 236 , 239 , 242 , 245 , 248 , 251 , 254 , 257 , 260].

An exact value of obtained array *x*  = [1E20 , 1E23 , 1E26 , 1E29 , 1E32 , 1E35 , 1E38 , 1E41 , 1E44 , 1E47 , 1E50 , 1E53 , 1E56 , 1E59 , 1E62 , 1E65 , 1E68 , 1E71 , 1E74 , 1E77 , 1E80 , 1E83 , 1E86 , 1E89 , 1E92 , 1E95 , 1E98 , 1E101 , 1E104 , 1E107 , 1E110 , 1E113 , 1E116 , 1E119 , 1E122 , 1E125 , 1E128 , 1E131 , 1E134 , 1E137 , 1E140 , 1E143 , 1E146 , 1E149 , 1E152 , 1E155 , 1E158 , 1E161 , 1E164 , 1E167 , 1E170 , 1E173 , 1E176 , 1E179 , 1E182 , 1E185 , 1E188 , 1E191 , 1E194 , 1E197 , 1E200 , 1E203 , 1E206 , 1E209 , 1E212 , 1E215 , 1E218 , 1E221 , 1E224 , 1E227 , 1E230 , 1E233 , 1E236 , 1E239 , 1E242 , 1E245 , 1E248 , 1E251 , 1E254 , 1E257 , 1E260].