**besseli0**

*Modified Bessel function of the first kind of zero order.*

**Syntax:**

*y* **= besseli0***(x);*

**Arguments:**

*x* – function argument.

**Description:**

Linear regular differential equation of the second order appears as:

is referred to as the Bessel equation. Number *v* is referred to as Bessel equation order.

Modified Bessel equation that is obtained from the Bessel regular equation due to a change of *x* for *–ix* appears as:

Solution of this equation is expressed via the so called modified Bessel function of the first and second kind:

where *C*1 and *C*2 are random constants, *Iv*(*x*) and *Kv*(*x*) designate modified Bessel functions of the first and second kind, correspondingly.

Function calculates the modified Bessel function of the first kind  of zero order (*v* = 0) from argument *x*.

**Result:**

*y* – value of the modified Bessel function of the first kind  of zero order (*v* = 0) from argument *x*.