**besseli**

*Modified Bessel function of the first kind of order higher than 2.*

**Syntax:**

*y* **= besseli***(v*, *x);*

**Arguments:**

*v* – function order,

*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 order, correspondingly.

Function calculates the modified Bessel function of the first kind  of order *v* from argument *x*.

**Result:**

*y* – value of the modified Bessel function of the first kind of order *v* from argument *x*.