NAME

qinf – Quadruple-precision +Infinity

SYNOPSIS

Fortran (77, 90, 95, HPF):

f77 *[flags] file(s) . . . -L/usr/local/lib -lgjl*

REAL*16 FUNCTION qinf()

C (K&R, 89, 99), C++ (98):

cc *[flags] -I/usr/local/include file(s) . . . -L/usr/local/lib -lgjl*

Use

#include <gampsi.h>

to get this prototype:

fortran_quadruple_precision qinf(void);

NB: The definition of C/C++ data types **fortran_** *xxx*, and the mapping of Fortran external names to C/C++ external names, is handled by the C/C++ header file. That way, the same function or subroutine name can be used in C, C++, and Fortran code, independent of compiler conventions for mangling of external names in these programming languages.

Last code modification: 12-Jun-2000

DESCRIPTION

Return quadruple-precision +Infinity, or else on non-IEEE 754 systems, the largest representable floating-point number.

For IEEE 754 systems, each call to this function intentionally produces a trappable zero divide, rather than saving the computed value on the first call, and then just returning the saved value on subsequent calls.

This function exists because of at least one abberant software implementation of quadruple-precision arithmetic (on IBM RS/6000 AIX 4.x), which produces NaN, instead of Infinity, for the square of large numbers. Fortunately, it correctly produces Infinity for 1.0/0.0, so that is how we generate it here.

Relegating the computation of Infinity to a separate function also provides a convenient single debugger breakpoint location.

SEE ALSO

ainf(3), **dinf**(3), **isainf**(3), **isdinf**(3), **isqinf**(3).

AUTHORS

The algorithms and code are described in detail in the paper

Algorithm xxx: Quadruple-Precision Gamma(x) and psi(x) Functions for Real Arguments

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