NAME

finite, finitef, finitel, isinf, isinff, isinfl, isnan, isnanf, isnanl − BSD floating-point classification functions

LIBRARY

Math library (*libm*, −*lm*)

SYNOPSIS

```
#include <math.h>

int finite(double x);
int finitef(float x);
int finitel(long double x);

int isinf(double x);
int isinff(float x);
int isinfl(long double x);

int isnan(double x);
int isnanf(float x);
int isnanl(long double x);
```

Feature Test Macro Requirements for glibc (see **feature_test_macros**(7)):

finite(), **finitef**(), **finitel**():

```
/* glibc >= 2.19: */ _DEFAULT_SOURCE
   || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

isinf():

```
_XOPEN_SOURCE >= 600 || _ISOC99_SOURCE
   || /* glibc >= 2.19: */ _DEFAULT_SOURCE
   || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

isinff(), **isinfl**():

```
/* glibc >= 2.19: */ _DEFAULT_SOURCE
   || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

isnan():

```
_XOPEN_SOURCE || _ISOC99_SOURCE
   || /* glibc >= 2.19: */ _DEFAULT_SOURCE
   || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

isnanf(), **isnanl**():

```
_XOPEN_SOURCE >= 600
   || /* glibc >= 2.19: */ _DEFAULT_SOURCE
   || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

The **finite**(), **finitef**(), and **finitel**() functions return a nonzero value if *x* is neither infinite nor a "not-a-number" (NaN) value, and 0 otherwise.

The **isnan**(), **isnanf**(), and **isnanl**() functions return a nonzero value if *x* is a NaN value, and 0 otherwise.

The **isinf**(), **isinff**(), and **isinfl**() functions return 1 if *x* is positive infinity, −1 if *x* is negative infinity, and 0 otherwise.

ATTRIBUTES

For an explanation of the terms used in this section, see **attributes**(7).

Interface	Attribute	Value
finite(), **finitef**(), **finitel**(), **isinf**(), **isinff**(), **isinfl**(), **isnan**(), **isnanf**(), **isnanl**()	Thread safety	MT-Safe

NOTES

Note that these functions are obsolete. C99 defines macros **isfinite**(), **isinf**(), and **isnan**() (for all types) replacing them. Further note that the C99 **isinf**() has weaker guarantees on the return value. See **fpclassify**(3).

SEE ALSO

fpclassify(3)