

**NAME**

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

**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 since 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
isinf():
    _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE
    || /* Glibc since 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
isinff(), isinfl():
    /* Glibc since 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
isnan():
    _XOPEN_SOURCE || _ISOC99_SOURCE
    || /* Glibc since 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
isnanf(), isnanl():
    _XOPEN_SOURCE >= 600
    || /* Glibc since 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 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
<b><code>finite()</code></b> , <b><code>finitef()</code></b> , <b><code>finitel()</code></b> , <b><code>isinf()</code></b> , <b><code>isinff()</code></b> , <b><code>isinfl()</code></b> , <b><code>isnan()</code></b> , <b><code>isnanf()</code></b> , <b><code>isnanl()</code></b>	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)****COLOPHON**

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