**sinh(x): hyperbolic sine function**

**Description**

This function returns the hyperbolic sine of x, which is defined mathematically as:

sinh(x) = (e x - e -x) / 2

Domain: R = (-∞ , + ∞)

Co-Domain: R = (-∞ , + ∞)

**Attributes**

* sinh(0) = 0, sinh(∞) = ∞, sinh(–∞) = –∞
* On success, these functions return the hyperbolic sine of x.
* If x is a NaN, a NaN is returned.
* If x is +0 (-0), +0 (-0) is returned.
* If x is positive infinity (negative infinity), positive infinity (negative infinity) is returned.
* If the result overflows, a range error occurs, and the functions return HUGE\_VAL, HUGE\_VALF, or HUGE\_VALL, respectively, with the same sign as x.

| ATTRIBUTE TYPE | ATTRIBUTE VALUE |
| --- | --- |
| MT-Level | MT-Safe |

**USAGE**

An application wishing to check for error situations should set errno to 0 before calling sinh(). If errno is non-zero on return, or the return value is NaN, an error has occurred.