JAVA.LANG.MATH.SINH METHOD

Description

The **java.lang.Math.sinh*doublex*** the the hyperbolic sine of a double value. The hyperbolic sine of x is defined to be $(e^x - e^{-x})/2$ where e is Euler's number.Special cases:

- If the argument is NaN, then the result is NaN.
- If the argument is infinite, then the result is an infinity with the same sign as the argument.
- If the argument is zero, then the result is a zero with the same sign as the argument.

The computed result must be within 2.5 ulps of the exact result.

Declaration

Following is the declaration for **java.lang.Math.sinh** method

```
public static double sinh(double x)
```

Parameters

- **x** -- The number whose hyperbolic sine is to be returned.

Return Value

This method returns the hyperbolic sine of x.

Exception

- **NA**

Example

The following example shows the usage of lang.Math.sinh method.

```
package com.tutorialspoint;

import java.lang.*;

public class MathDemo {

   public static void main(String[] args) {

   // get two double numbers numbers
   double x = 45;
   double y = -180;

   // convert them to radians
   x = Math.toRadians(x);
   y = Math.toRadians(y);

   // print the hyperbolic sine for these doubles
   System.out.println("sinh(" + x + ")=" + Math.sinh(x));
   System.out.println("sinh(" + y + ")=" + Math.sinh(y));
   }
}
```

Let us compile and run the above program, this will produce the following result:

```
sinh(0.7853981633974483)=0.8686709614860095
```

```
sinh(-3.141592653589793)=-11.548739357257748
```