Math Functions

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Mathematical functions can be performed using the `System.Math` class. `System.Math` is a static class that is included within .NET as part of the `System` namespace. .NET is a free, cross-platform, open source developer platform created by Microsoft.

Syntax

The `Math` class can be accessed by including the `System` namespace within a `.cs` file by adding the following line:

```
// Include the System namespace
using System;
```

The `Math` class is static and is accessed without needing to create an instance.

Example

The following example uses the `Math.Pow()` method to return the result of `4` raised to the power of `2`:

```
// Include the System namespace
```

```
using System;

public class Example
{
  public static void Main(string[] args)
  {
    // Raise 4 to power of 2
    double x = Math.Pow(4,2);

    System.Console.WriteLine("x = {0}", x);
    // Output: x = 16
  }
}
```

In cases where access to `System.Math` is required but access to the entire `System` namespace is not, an alternative syntax can be used instead. The following example uses an alternative syntax and returns the floor of `3/2` using the `System.Math.Floor()` method:

```
public class Example
{
  public static void Main(string[] args)
  {
    // Round down the result of 3/2
    double x = System.Math.Floor((double)3/2);

    System.Console.WriteLine("x = {0}", x);
    // Output: x = 1
  }
}
```

Below are a selected list of `System.Math` methods:

Math Functions

`.Abs()`

Returns the absolute value of a given number.

`.Acos()`

Returns the inverse cosine of the argument.

`.Asin()`

Returns an angle in radians whose sine is a specified number.

`.Atan()`

Returns the inverse tangent of the argument.

`.Atan2()`

Returns the angle, in radians, between the positive x-axis and the vector to point (x, y).

`.Ceiling()`

Returns the smallest integer which is greater than or equal to a given number.

`.Cos()`

Returns the cosine of a given angle.

`.Cosh()`

Returns the hyperbolic cosine of a given angle.

`.Exp()`

Returns the result of raising e to the power of a specific number.

`.Floor()`

Returns the largest whole integer which is less than or equal to the given number.

`.Max()`

Returns the greater of two specified numbers.

`.Min()`

Returns the smaller of two specified numbers.

`.Pow()`
Returns the result of a given number raised to the power of a second number.

`.Round()`
Returns a value rounded to the nearest integer.

`.Sin()`
Returns the sine of a given angle.

`.Sinh()`
Returns the hyperbolic sine of a given angle.

`.Sqrt()`
Returns the square root of the given number.

`.Tan()`
Returns the tangent of a given angle.

`.Tanh()`
Computes the hyperbolic tangent of a given angle in radians.

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