

The Math Class

The class `Math` contains mathematical constants and methods for performing basic numeric operations such as exponential, logarithm, and trigonometric functions.

Constants:

```
final static double E  
final static double PI
```

Constant values that contain e , the base of the natural logarithm, and π , the ratio of the circumference of a circle to its diameter.

Selected Methods:

```
static int abs(int num)  
static double abs(double num)  
    Returns the absolute value of num.  
    E.g., Math.abs(-44) returns 44
```

```
static double ceil(double num)  
    Returns the ceiling of num, which is the smallest whole number greater than or equal to  
    num (rounds up).  
    E.g., Math.ceil(4.321) returns 5.0
```

```
static double floor(double num)  
    Returns the floor of num, which is the largest whole number less than or equal to num  
    (rounds down).  
    E.g., Math.floor(4.567) returns 4.0
```

```
static double exp(double power)  
    Returns the value  $e$  raised to the specified power  
    E.g., Math.exp(1.0) returns 2.7182818284590455
```

```
static double pow(double num, double power)  
    Returns the value num raised to the specified power  
    E.g., Math.pow(2.0, 3.0) returns 8.0
```

```
static double random()  
    Returns a random number greater or equal 0.0 and less than 1.0.
```

```
static long round(double num)  
    Returns closest integer to num.  
    E.g., Math.round(3.45) returns 3L
```

```
static double sqrt(double num)  
    Returns the square root of num, which must be positive.  
    E.g., Math.sqrt(9.0) returns 3.0
```

(Static methods are invoked using the class name, e.g., `Math.random()`)