เรื่องที่ 6 การเขียนโปรแกรมเชิงวัตถุร่วมกับคลาสทางคณิตศาสตร์

ENGCE174 การเขียนโปรแกรมเชิงวัตถุ (Object-oriented programming)

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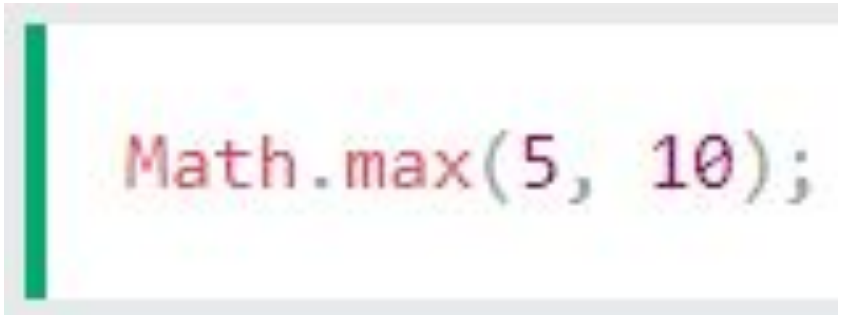
Math.max(*x*,*y*)

The `Math.max(x,y)` method can be used to find the highest value of *x* and *y*:



Math.sqrt(*x*)

The `Math.sqrt(x)` method returns the square root of *x*:

Math.abs(*x*)

The `Math.abs(x)` method returns the absolute (positive) value of *x*:

Random Numbers

`Math.random()` returns a random number between 0.0 (inclusive), and 1.0 (exclusive):

```
Math.random();
```

To get more control over the random number, for example, if you only want a random number between 0 and 100, you can use the following formula:

```
int randomNum = (int)(Math.random() * 101);  // 0 to 100
```

Note: All Math methods are `static`.

All Math Methods

Method	Description	Return Type
abs(x)	Returns the absolute value of x	double|float|int|long
acos(x)	Returns the arccosine of x, in radians	double
asin(x)	Returns the arcsine of x, in radians	double
atan(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians	double
atan2(y,x)	Returns the angle theta from the conversion of rectangular coordinates (x, y) to polar coordinates (r, theta).	double
cbrt(x)	Returns the cube root of x	double
ceil(x)	Returns the value of x rounded up to its nearest integer	double
copySign(x, y)	Returns the first floating point x with the sign of the second floating point y	double
cos(x)	Returns the cosine of x (x is in radians)	double
cosh(x)	Returns the hyperbolic cosine of a double value	double
exp(x)	Returns the value of E^x	double
expm1(x)	Returns e^x -1	double
floor(x)	Returns the value of x rounded down to its nearest integer	double
getExponent(x)	Returns the unbiased exponent used in x	int
hypot(x, y)	Returns sqrt(x^2 +y^2) without intermediate overflow or underflow	double
IEEEremainder(x, y)	Computes the remainder operation on x and y as prescribed by the IEEE 754 standard	double
log(x)	Returns the natural logarithm (base E) of x	double
log10(x)	Returns the base 10 logarithm of x	double
log1p(x)	Returns the natural logarithm (base E) of the sum of x and 1	double
max(x, y)	Returns the number with the highest value	double|float|int|long
min(x, y)	Returns the number with the lowest value	double|float|int|long
nextAfter(x, y)	Returns the floating point number adjacent to x in the direction of y	double|float
nextUp(x)	Returns the floating point value adjacent to x in the direction of positive infinity	double|float
pow(x, y)	Returns the value of x to the power of y	double
random()	Returns a random number between 0 and 1	double
round(x)	Returns the value of x rounded to its nearest integer	int
rint(x)	Returns the double value that is closest to x and equal to a mathematical integer	double
signum(x)	Returns the sign of x	double

Test Yourself With Exercises

Use the correct method to find the highest value of x and y.

```
int x = 5;
int y = 10;
Math.     (x, y);
```