

# Java for Beginners

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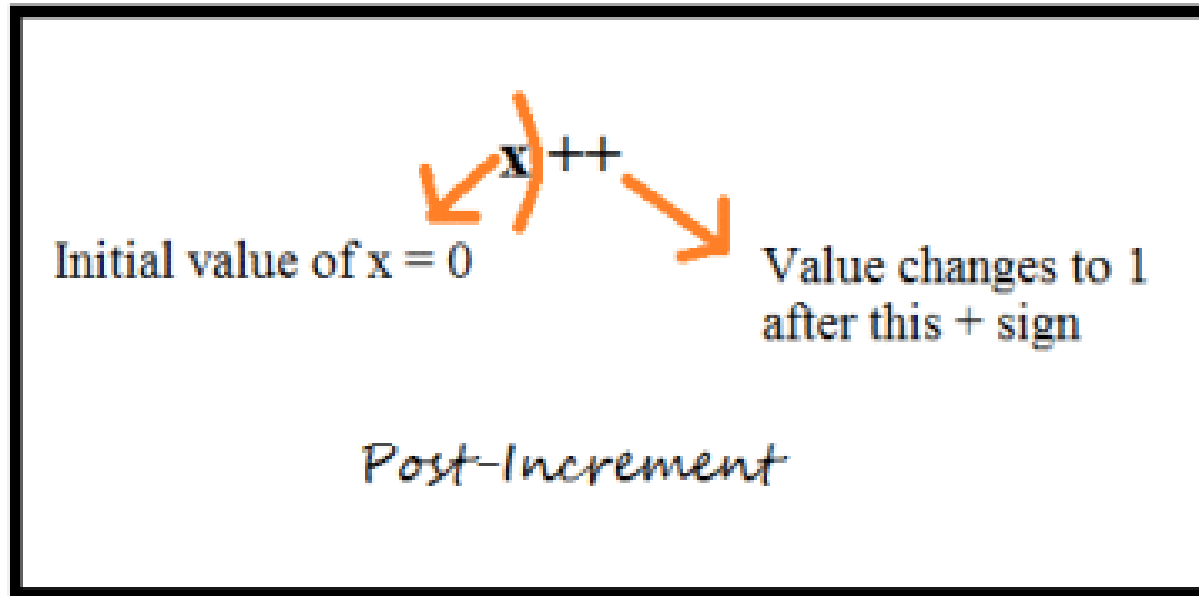
MATHEMATICAL METHODS

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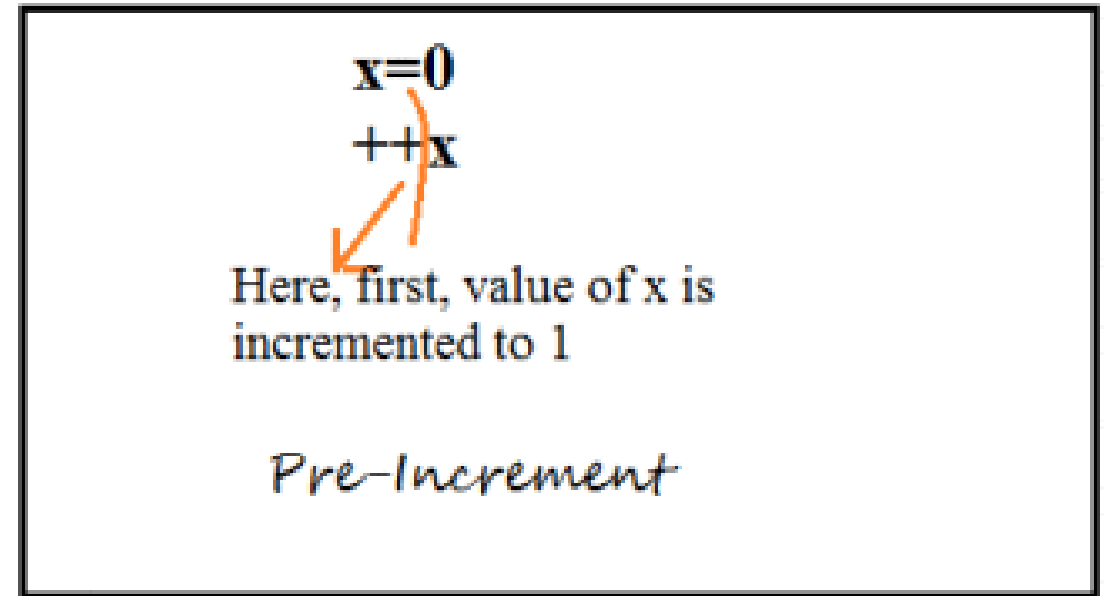
IEEE SENIOR MEMBER

# Post and Pre Increment/Decrement

## Basic Arithmetic (+, -, \*, /, %)



```
y = x;  
x = x + 1;
```



```
x = x + 1;  
y = x;
```

# Augmented Assignments

Basic Arithmetic (+, -, \*, /, %)

Operator	Example	Equivalent to	Read As
=	$x = 1$	$x = 1$	Store 1 to x
+=	$x += 1$	$x = x + 1$	x increased by 1
-=	$x -= 1$	$x = x - 1$	x decreased by 1
*=	$x *= 1$	$x = x * 1$	x multiplied by 1
/=	$x /= 1$	$x = x / 1$	x divided by 1
%=	$x \% = 1$	$x = x \% 1$	x take modulus by 1

# API: MATH CLASS

**CLASS**

**Methods**

**OVERLOADED**

Same name different  
implementation

```
public class MathClass104
{
    public static void main(String[] args)
    {
        System.out.println( Math.max( 5,6 ) );
        System.out.println( Math.max( 6.8,5.4 ) );
    }
}
```

**Returns the maximum value of two values**

**Output::**

6

6.8

Methods				
Method Name	Data Type In	Data Type Returned	Sequence	Quantity
→ max	int, int	int	num, num	2
→ max	double, double	double	num, num	2

static double

max(double a, double b)  
Returns the greater of two double values.

static float

max(float a, float b)  
Returns the greater of two float values.

static int

max(int a, int b)  
Returns the greater of two int values.

static long

max(long a, long b)  
Returns the greater of two long values.

# Math Class

A collection of mathematical constants and functions



Rounding Methods	Description
<code>ceil(x)</code>	x is rounded up to its nearest integer. This integer is returned as a double value.
<code>floor(x)</code>	x is founded down to its nearest integer. This integer is returned as a double value.
<code>rint(x)</code>	x is rounded up to its nearest integer. If x is equally close to two integers, the even one is returned as a double value
<code>round(x)</code>	Returns (int) <code>Math.floor(x+0.5)</code> if x is a float and returns (long) <code>Math.floor(x+0.5)</code> if x is a double.
Min Max Abs Methods	Description
<code>max(x, y)</code>	Return the greater number between x and y.
<code>min(x, y)</code>	Return the less number between x and y
<code>abs(x)</code>	Return the absolute value of x
Random Methods	Description
<code>random()</code>	Return a random number between $0 \leq y < 1$ .



# Math Class

A collection of mathematical constants and functions

Methods	Description	
exp(x)	Returns e raised to power of x	$(e^x)$
log(x)	Return the natural logarithm of x	$(\ln(x) = \log_e(x))$ .
log10(x)	Returns the base 10 algorithm of x	$(\log_{10}(x))$ .
pow(a, b)	Returns a raised to the power of b	$(a^b)$
sqrt(x)	Returns the square root of x	$(\sqrt{x})$ for $x \geq 0$

To use these methods, call `Math.methodName();`



# Math Class

A collection of mathematical constants and functions

Methods	Description
<code>sin(radians)</code>	Returns the trigonometric sine of an angle in radians
<code>cos(radians)</code>	Returns the trigonometric cosine of an angle in radians
<code>tan(radians)</code>	Returns the trigonometric tan of an angle in radians
<code>toRadians(degree)</code>	Return the angle in radians for the angle in degree.
<code>toDegree(radians)</code>	Return the angle in degrees for the angle in radians.
<code>asin(a)</code>	Return the angle in radians for the inverse of sine.
<code>acos(a)</code>	Return the angle in radians for the inverse of cosine.
<code>atan(a)</code>	Return the angle in radians for the inverse of tangent.

To use these methods, call `Math.methodName();`