



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.

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**DEPARTMENT OF COMPUTER SCIENCE ENGINEERING
COURSE CODE & NAME : 23CST205 - Object Oriented Programming Using Java**

II YEAR/ III SEMESTER

UNIT – II INTRODUCTION TO JAVA

Topic: BASICS OF JAVA PROGRAMMING-MATH CLASS



Java Math Class

- The Java Math class is a powerhouse of static methods and constants that facilitate a wide range of mathematical operations from basic arithmetic to complex trigonometric calculations.

- What is Java Math Class?

The **Java Math class**, part of the **java.lang** package is a utility class that provides a wide range of mathematical functions and constants.

- Declaration

```
public final class Math extends Object {  
  
    // Class body with methods and constants  
  
}
```

- This declaration indicates that the Math class:
- Cannot be subclassed: Because it's declared as final.
- Inherits from Object: Like all Java classes, Math implicitly extends the Object class, which is the root of the Java class hierarchy.



Java Operators

Java divides the operators into the following groups:

- Arithmetic operators
- Assignment operators
- Comparison operators
- Logical operators
- Bitwise operators



Arithmetic Operators

- Arithmetic operators are used to perform common mathematical operations.

Operator	Name	Description	Example
+	Addition	Adds together two values	$x + y$
-	Subtraction	Subtracts one value from another	$x - y$
*	Multiplication	Multiplies two values	$x * y$
/	Division	Divides one value by another	x / y
%	Modulus	Returns the division remainder	$x \% y$
++	Increment	Increases the value of a variable by 1	$++x$
--	Decrement	Decreases the value of a variable by 1	$--x$



Assignment Operators

- Assignment operators are used to assign values to variables.

Operator	Example	Same As
=	x = 5	x = 5
+=	x += 3	x = x + 3
-=	x -= 3	x = x - 3
*=	x *= 3	x = x * 3
/=	x /= 3	x = x / 3
%=	x %= 3	x = x % 3
&=	x &= 3	x = x & 3
=	x = 3	x = x 3
^=	x ^= 3	x = x ^ 3
>>=	x >>= 3	x = x >> 3
<<=	x <<= 3	x = x << 3



Comparison Operators

- Comparison operators are used to compare two values (or variables).
- The return value of a comparison is either true or false. These values are known as Boolean values.

Operator	Name	Example
<code>==</code>	Equal to	<code>x == y</code>
<code>!=</code>	Not equal	<code>x != y</code>
<code>></code>	Greater than	<code>x > y</code>
<code><</code>	Less than	<code>x < y</code>
<code>>=</code>	Greater than or equal to	<code>x >= y</code>
<code><=</code>	Less than or equal to	<code>x <= y</code>



Logical Operators

- Logical operators are used to determine the logic between variables or values:
- You can also test for true or false values with logical operators.

Operator	Name	Description	Example
&&	Logical and	Returns true if both statements are true	<code>x < 5 && x < 10</code>
	Logical or	Returns true if one of the statements is true	<code>x < 5 x < 4</code>
!	Logical not	Reverse the result, returns false if the result is true	<code>!(x < 5 && x < 10)</code>

