Unary Operators
Shorthanded operators

Unary Operators

Operator	Name	Meaning
+	Unary Plus Operator	Indicates positive value
-	Unary Minus Operator	Negates an expression or value
++	Increment Operator	Increments a value by 1
--	Decrement Operator	Decrements a value by 1

Increment and Decrement Operators

- Increment and decrement operators increase and decrease a value stored in a number by 1
- For example,

```
int var = 100;
//Following two statements are incrementing the value of var by 1
var = var +1;
var++;
```

- When the operator is placed before the operand it is called pre

```
++var  or  -- var
```

- When the operator is placed after the operand it is called post

```
var++  or  var--
```

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The difference between Pre and Post

- Pre-Increment/Pre-Decrement: When the operator is placed before an operand (++expr, --expr), the variable will be incremented or decremented by 1 in the memory, and the new value is used in the expression in which it appears.

```
int a = 25;
System.out.println(++a);   //26
System.out.println(--a);   //25
```

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The difference between Pre and Post

- Post-Increment/Post-Decrement: When the operator is placed after an operand(expr++,expr--), the old value of the variable will be used in the expression where it appears and then the variable will be incremented or decremented by 1 in the memory.

```
int b = 25;
System.out.println(b++);   //25
System.out.println(b--);   //26
```

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Task

What will be the output of this code segments?

```
1- x = 2;
   y = x++;
   System.out.println(y);

2- x = 2;
   System.out.println(x++);

3- x = 2;
   System.out.println(--x);

4- x = 8;
   y = x--;
   System.out.println(y);
```

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Task

```
int a = 1;
a = -a-- + a++ / -a-- * --a;
System.out.println(a);
```

Task

```
int a = 50;
a = --a + a++ + a-- + a++;
System.out.println(a);
```

```
int x = 4;
int y = x * 4 - x++;
System.out.println(y);
```

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Shorthand operators

NAME	SHORTHAND OPERATOR	MEANING
Assignment	x = y	x = y
Addition Assignment	x += y	x = x + y
Subtraction Assignment	x -= y	x = x – y
Multiplication Assignment	x *= y	x = x * y
Division Assignment	x /= y	x = x / y
Remainder Assignment	x %= y	x = x % y

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Shorthand Operators

OPERATOR	Expression	MEANING
=	x = y	x = y
+=	x += y	x = x + y
-=	x -= y	x = x - y
*=	x *= y	x = x * y
/=	x /= y	x = x / y
%=	x %= y	x = x % y

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shorthand Operators

- X =10; Y =20; X += Y ➔ X = 10 +20 = 30 ;
- A 30; B = 10; A -= B ➔ A = 30 – 10 = 20;
- X = 2; Y = 3; X *= Y ➔ X = 2 * 3 = 6;
- A = 10; B = 2; A /= B ➔ A = 10/2 = 5;
- X= 20; Y = 3; X %=Y ➔ X = 2;

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Task

- 1. Given int z= 198;
  - verify that the number of z is even number

- 2. byte a= 30;
- Int b = b+= a; what's the value of b ?

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