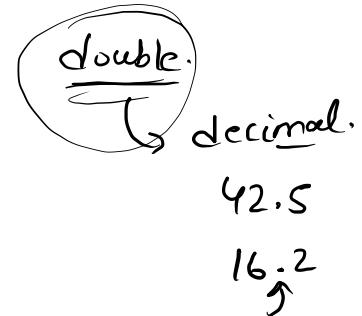
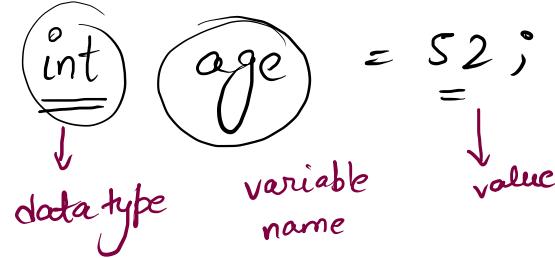


# Revision.

## Variables



## Input

Scanner scn = new Scanner (System.in);

A diagram showing the creation of a Scanner object named scn. The scn identifier is circled in green. A vertical line and arrow point down from the circled scn to the text "any name".

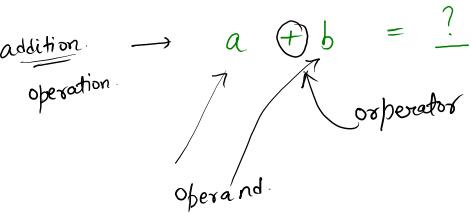
int

scn.nextInt();

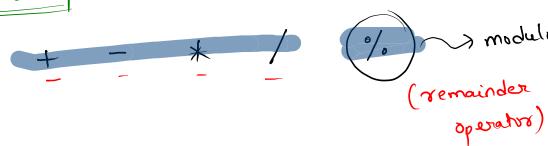
double

scn.nextDouble();

## Operator    (Maths)



arithmetic operator:



$$47 \% 5 = ? \text{ (2)}$$

$$5) \overline{47} \quad \begin{array}{r} 9 \\ 45 \\ \hline 2 \end{array}$$

(2) → remainder

$$27 \% 3 = 0$$

$$3) \overline{27} \quad \begin{array}{r} 9 \\ 27 \\ \hline 0 \end{array}$$

$$\boxed{\begin{array}{r} \% \\ 5 \end{array}}$$

\*\*

$$\boxed{n \% 10 = \text{last digit}}$$

$$127 \% 10 = ? \text{ (7)}$$

(7)

$$36 \% 10 = 6$$

$$10) \overline{36} \quad \begin{array}{r} 3 \\ 30 \\ \hline 6 \end{array}$$

$$26 \% 2 = 0$$

$$26 \% 3 = 2$$

$$10) \overline{127} \quad \begin{array}{r} 12 \\ 10 \\ \hline 27 \\ 20 \\ \hline 7 \end{array}$$

## Add Last Digits

You will be given two numbers of int data-type as input and you have to print the sum of their last digits as output.

Test Case 1:

Given Inputs: 2357 48986

Expected Output: 13 ✓

Explanation: The last digit of 2357 is 7 and the last digit of 48986 is 6 and the sum of these last digits is 13.  
Hence the output is 13.

Sample Input 0

23456  
9873

Sample Output 0

9

$$x = 23456$$

$$y = 9873$$

$$\text{ld}x = 6$$

$$\text{ld}y = \underline{3} \quad 9$$

$$x = 2357$$

$$y = 48986$$

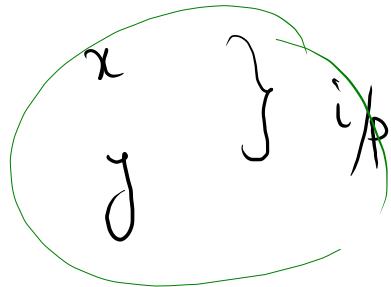
$$\text{ld}x = 7$$

$$\text{ld}y = \frac{6}{13}$$

answer

Algo

1.



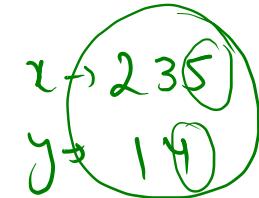
2.

$$\begin{aligned} \text{ldx} &= x \% 10 \\ \text{ldy} &= y \% 10 \end{aligned}$$

variable

3.  $\text{print} (\underline{\text{ldx}} \pm \text{ldy})$

Pse



last D x = 5

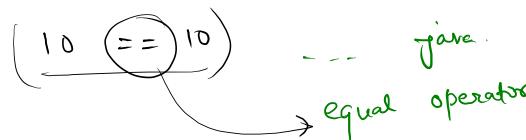
last D y = 4

print (⑨)

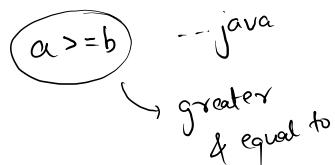
```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in); → compulsory to take i/p
8         int x = scn.nextInt();
9         int y = scn.nextInt();
10
11         int lastDigitX = x % 10; } last digit
12         int lastDigitY = y % 10;
13
14         System.out.println(lastDigitX + lastDigitY);
15
16     }
17 }
```

## Comparison Operator

$$10 = 10 \quad \dots \text{maths}$$



$$a \geq b \quad \dots \text{maths}$$



$$a \leq b \rightarrow a <= b \quad \begin{matrix} \text{less than} \\ \text{or equal} \end{matrix}$$

$\neq$  not equal  $\dots$  (maths)

$!=$  not equal  $\dots$  java

# Summary :- Comparison Operators

$= =$

$!=$

$<$

$\leq$

$>$

$\geq$

$$10 <= 20$$

( true ✓  
false .



12345 → 54321

no

— not studied.

⑥

first

{ 1234 → prime factor.

doubt

extra — booster.

$$12 < 17$$

$$15 \leq 7$$

true / false

false

$|0| = 8$  ~ true.

$18 == 15$

true

## Greater than 100 or not

You will be given an integer as input. You have to print true if the number is greater than 100, and false otherwise.

$$16 \geq 14$$

Test Case 1:

Input: 110

Output: true

Explanation: Since the given input is greater than 100, we printed true.

$$16 \geq 14 \rightarrow \text{true}$$

$$(n) > 100$$

true

false

$$18 > 100$$

false

$$n = 110$$

$$180 > 100$$

true

$$n = 90$$

$$110 > 100 \rightarrow \text{yes} \rightarrow \text{true}$$

$$90 > 100 \rightarrow \text{no} \rightarrow \text{false}$$

$$n = \underline{100}$$

$$100 > 100 \rightarrow \text{no} \rightarrow \text{false}$$

$$100 > 100$$

$$100 == 100$$

$$100 > 100$$

false

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         /* Enter your code here. Read input from
8            Scanner scn = new Scanner(System.in);
9            int n = scn.nextInt();
10
11            System.out.println(n > 100);
12        }
13    }
```

180 > 100

true

true

# xyzw

You will be given four integer inputs  $x, y, z, w$ . Print true if  $x * y$  is equal to  $z * w$  and false otherwise.

Sample Input 0

```
5  
8  
10  
4
```

Sample Output 0

```
true
```

i/p {  
  x  
  y  
  z  
  w

$$x * y == z * w$$

$$x * y == z * w$$

↓  
true

false

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         Scanner scn = new Scanner(System.in);
8         int x = scn.nextInt();
9         int y = scn.nextInt();
10        int z = scn.nextInt();
11        int w = scn.nextInt();
12
13        System.out.println(x * y == z * w);
14    }
15 }
```

} ip

!=

not equal to

$x * y \neq z * w$

## Even or not

You have to take an integer as input and print true if it is an even number and false otherwise.

Sample Input 0

22

Sample Output 0

true

i/p { int

even → true

odd → false

eg. ④ 17  
↳ false

③ 22  
↳ true

⑤ 31  
↳ false

⑥ ↳ true.

26 → even

how we can judge?

if a number is completely divisible by  
'2' → it is even.

$$\begin{array}{r} 2 \overline{)26} \\ \underline{26} \\ 0 \end{array}$$

even

$$\begin{array}{r} 2 \overline{)27} \\ \underline{26} \\ 1 \end{array}$$

odd.

$$\begin{array}{r} 2 \overline{)31} \\ \underline{30} \\ 1 \end{array}$$

odd

System out  
point (%)  
 $(n \% 2 == 0)$

Sum is less than 150 or not.

You will be given three integer inputs  $x, y, z$ . You have to find the sum of these inputs. Print true if the sum is less than 150 and false otherwise.

Sample Input 0

```
20  
30  
50
```

Sample Output 0

true

$y_p : \{ \begin{matrix} x \\ y \\ z \end{matrix}$

{ point ( $x + y + z < 150$ ) } :

$$20 + 30 + 50 < 150$$

$$100 < 150$$

✓  
true

```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         /* Enter your code here. Read input from STDIN
8         Scanner scn = new Scanner(System.in);
9         int x = scn.nextInt();
10        int y = scn.nextInt();
11        int z = scn.nextInt();
12
13        System.out.println( x + y + z < 150);
14    }
15
16 }
```

} i/p  
} compare & print

# Operator

1. arithmetic operators

( + - \* / % )

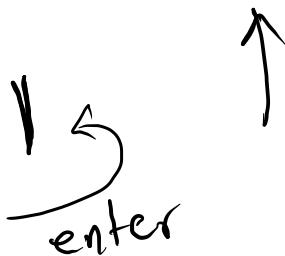
2. comp.

( < > == !=  
≤ ≥ )

3.

logical operator

( || , && )



# logical operators

double  
pipe sign

||  
(OR)

&&  
(and).

OR

$$\frac{10 < 20}{(A)} \quad || \quad \frac{40 > 10}{(B)}, = \text{true.}$$

if any one condition is true answer is TRUE



$$\frac{6 < 9}{\text{true}} \quad || \quad \frac{2 > 1}{\text{true}} = \text{true}$$

eg.

$$\frac{6 > 9}{\text{false}} \quad || \quad \frac{2 < 1}{\text{false}} = \text{false}$$

$$\frac{6 < 9}{\text{true}} \quad || \quad \frac{2 < 1}{\text{false}} = \text{true.}$$

$$\frac{8 < 0}{\text{false}} \quad || \quad \frac{2 > -2}{\text{true.}}$$

answer = ? true.

$$\frac{5 < 10}{\text{true}} \quad || \quad \frac{2 < 4}{\text{true}} \Rightarrow \text{true.}$$

And

\* If all true answer is true.

Eg.  $10 < 20$  &  $20 < 40$  = true.  
true true ✓

Eg.  $10 < 20$  &  $20 > 40$  = false.  
true false

Eg.  $10 < 20$  &  $40 > 20$  = true.  
true true

Eg.  $50 = 50$  &  $40 \neq 40$   $\Rightarrow$  false.  
true false

Eg.  $50 = 50$  ||  $40 \neq 40$   $\Rightarrow$  true  
true false

eg.

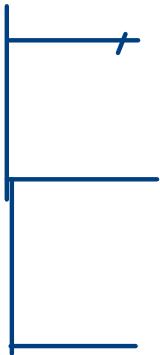
$$(2 * 4 == 8) \text{ } \& \text{ } (5 < 6) = ?$$

Annotations:

- The expression  $2 * 4 == 8$  is underlined with a green bracket and labeled "true".
- The expression  $5 < 6$  is underlined with a green bracket and labeled "true".
- A green circle surrounds the logical operator  $\&$ .
- A green arrow points from the word "true" under the first condition to the word "true" under the second condition.
- The question mark at the end is followed by the handwritten note "true" with an arrow pointing to it.

Revise

## Operators



arith. (+ - \* / %)

comparison (< > <= >= == !=)

logical (&& , ||)