

Subject: _____

int number; → Declaration
int number = 10; → Initialization
Date: _____

number = 20; // Manipulation

At

public class Main {

public static void main(String[] args);

int number; → Variable Declaration

number = 1; → value change

number = 10;

System.out.println(); → Variable Manipulation

Data(num) change ⇒

public class Main {

public static void main(String[] args) {

int number;

number = 10;

System.out.println("Before manipulation + number");

number = 20;

System.out.println("After manipulation +
number");

float name = 10.5f;

double name = 10.00001d;

boolean name = true;

int number = 123

boolean name = false;

String num = "123"

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Type Casting
↓
(Converting
Data Type)

Implicit \rightarrow 10.0 to 10 (No Data Loss)

Explicit (DATA LOSS) \Rightarrow 10.5 to 10

Implicit \Rightarrow

int num = 10

float number = num;

System.out.print(num); \rightarrow output
10.5

float num = 10.5f;

int number = (int) number;

System.out.println(number);

Explicit \Rightarrow

O \rightarrow Start / End

|| \rightarrow Input / Output / READ

[] \rightarrow variable declaration / process

Diamond \rightarrow Diamond Loop

→ Sequence.

(Prob - 1)

START

PROMT "Give a"

READ a

PROMT "Give b"

READ b

PROMT "Give h"

READ h

$$\text{area} = \frac{1}{2} \times (a+b) \times h$$

PRINT area

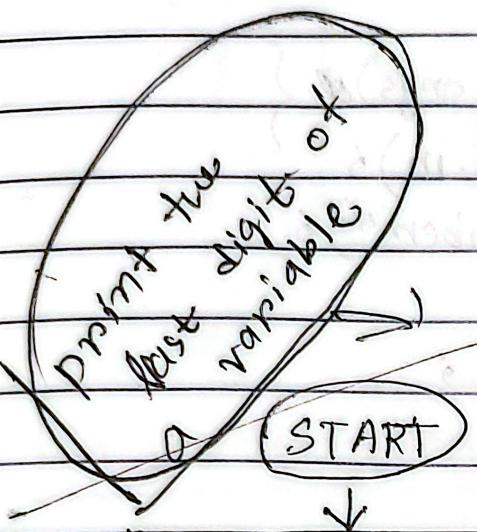
END

to get the last digit
digit \Rightarrow $\frac{123}{10}$

$$\frac{123}{10}$$

$$\% \Rightarrow \text{mod}$$

$$123 \% 10 = 3$$



Initialize the variable

`int a = 123;`

`int new = a % 10`

`SWAP`

`PRINT new`

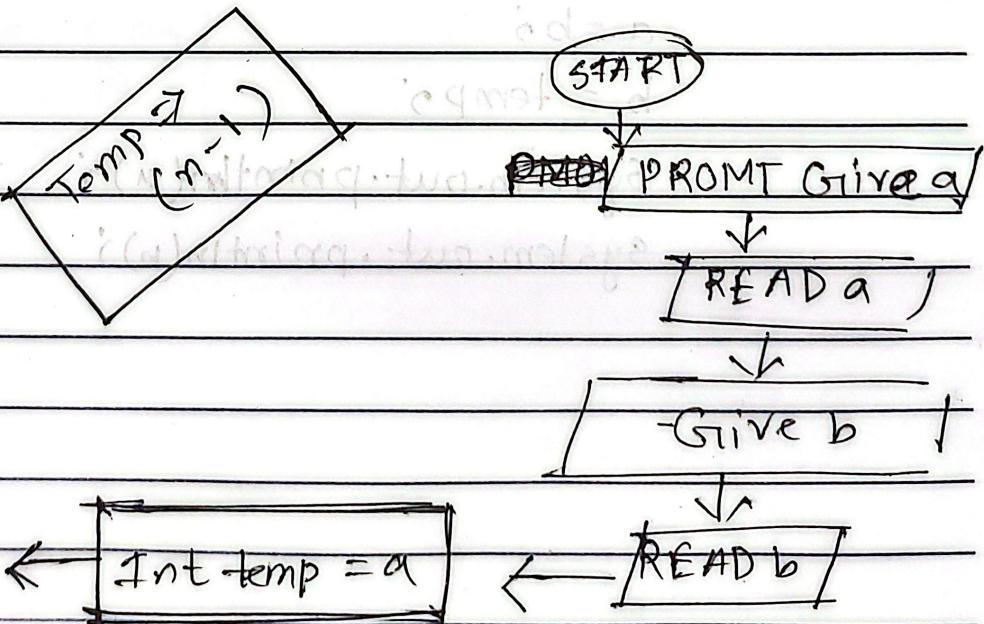
`int temp = a;`



`STOP`

`a = b; // 20`

`b = temp;`



```
import java.util.*;  
public class Main {  
    public static void main (String [] args) {  
        Scanner sc = new Scanner (System.in);  
        System.out.println ("Enter a number");  
        int num = sc.nextInt();  
        System.out.println ("num");  
    }  
}
```

int num = sc.nextInt

int + float = float

$$10 + 15.0 = 25.0$$

SWAP with third variable

int a = 10;

int b = 20;

int temp = a;

a = b;

b = temp;

System.out.println(a);

System.out.println(b);

a	b	a1	b1	Output
8	4	6.0	4.0	10
15	10	100	20.0	25.0
				35.0

Implicit type casting

- ① converts lower data type to higher data type
- ② Automatically done by the compiler
- ③ No Data loss

Explicit type casting

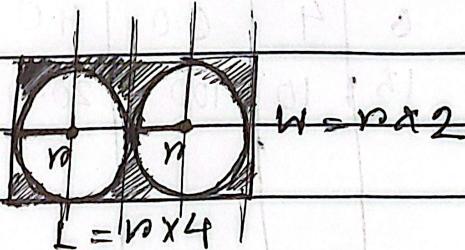
- ① converts higher data type to lower data type
- ② Done manually by the compiler
- ③ cause data loss

```
int num = 10;
float result = num; // int is automatically converted to float
```

```
int double num = 10.99;
int result = int(num);
```

Q [30/6/25]

(1)



PROMT "Please Enter the Radias of the Circle"

READ R

$$\text{Area of rectangle} = (4 \times R) \times (2 \times R)$$

$$\text{Area of circle} = \pi \cdot R \cdot R$$

$$\text{Area of the grey part} = \text{area of rectangle} - 2 \times (\text{Area of circle})$$

PRDMT "Here is the area of the grey/
unoccopied space"

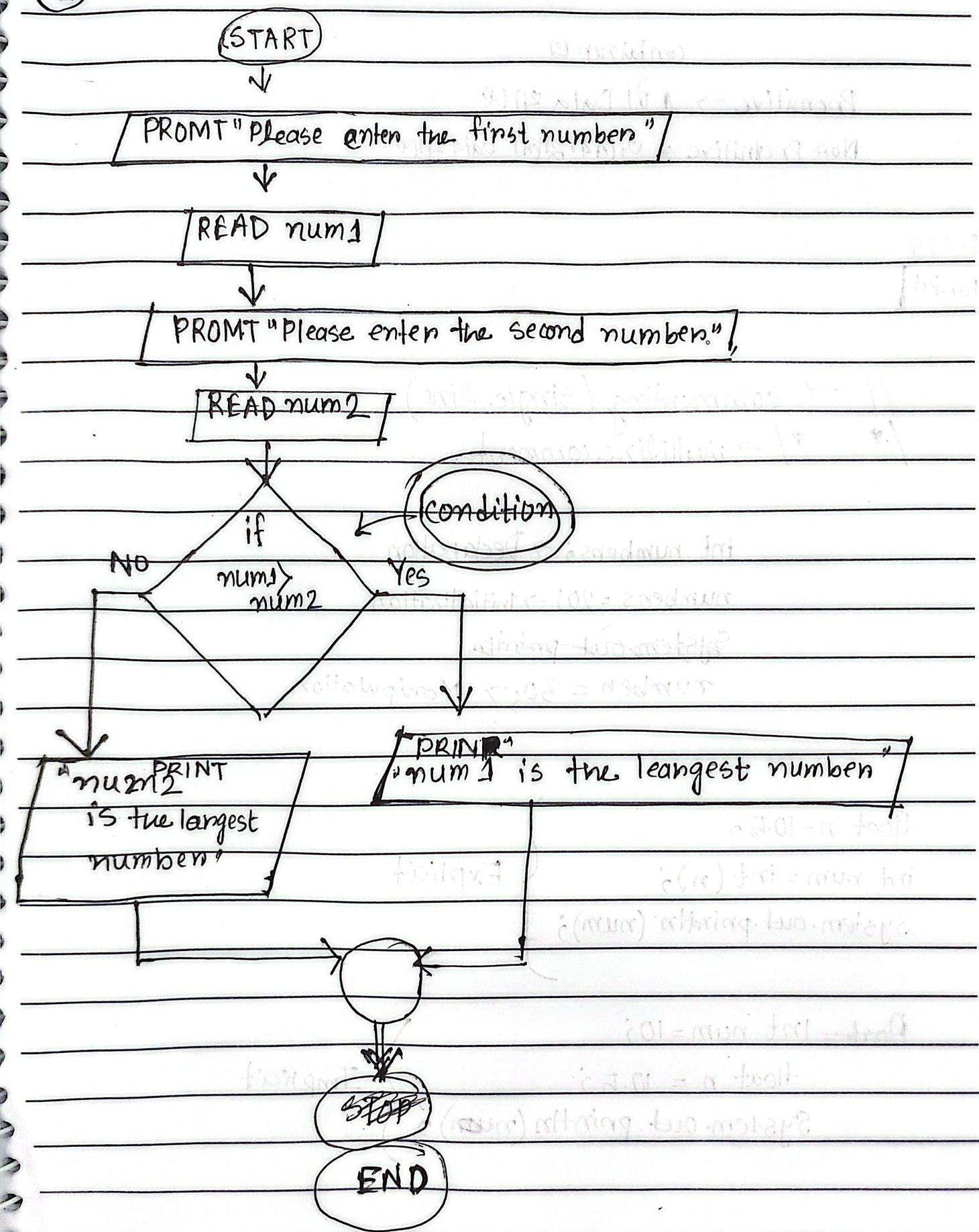
Print "Area of the grey part"

END

Subject: _____

Date:

(2)



Container (a)

Primitive → 1 to Data 2170

Non-Primitive → 0 to 1452170 Data 2170

2.7.25

Tutorial

// → commenting (single line)

/* */ → multiline comment

int numbers; → Declaration

numbers = 20; → Initialization

System.out.println

number = 30; → Manipulation

float n = 10.5;

int num = int(n);

System.out.println(num);

Explicit

float = int num = 10;

float n = 10.5;

System.out.println(n);

Implicit

Subject: _____

Date: * String to number :

int number = 10; value

string. value = String. ~~number~~ of (number);System.out.println(value); → 10 → String
output

• System.out.println(value + value); → 1010 → String

• System.out.println("This is number" + value);

• System.out.println(value + 10) → 20

int n = 10;

System.out.println("This is number" + " " +
n);

import java.util.Scanner;

public class Main {

Public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter "); → Prompt

int a = 10;

int b = 20;

int c = 30;

int temp1 = a;

int temp2 = b;

c

a = 10;

b = temp1;

c = temp2;

* int + float = float

Prob-10

					Output
a	b	a ₁	b ₁		
6	4	6.0	4.0		40
15	10	10.0	20.0		25.0
					35.0

(10.0 * 30.0)

(10.0 * 20.0)

(15 * 30.0)

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Date:

Notes :-

Type conversion Syntax :-

1. int → String

```
int num = 123;
```

```
String value = String.valueOf(num);
```

```
System.out.println(value);
```

2. String → int

```
String str = "456";
```

```
int num = Integer.valueOf(str);
```

```
System.out.println(num);
```

3. Double → int [Explicit]

```
double d = 12.99;
```

```
int num = (int) d;
```

```
System.out.println(num);
```

4. Integer → Double (Implicit)

```
int num = 5;
```

```
double d = num;
```

```
System.out.println(d);
```

5. String \rightarrow Double

String str = "9.81"

double d = Double.parseDouble(str);

System.out.println("d");

6. Double \rightarrow String

double d = 3.14;

String str = String.valueOf(d);

System.out.println(str);

7. Char \rightarrow int

Char ch = 'A'

int Ascii = (int) ch;

System.out.println(Ascii);

8. int \rightarrow char

int code = 66;

char ch = (char) code;

System.out.println(ch);

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(9)

String → Char :

char c = str.charAt()

Index

Index means the position of
the letter (Starting from 0)

(10) Char → String

String str = String.valueOf(ch);

String str = "Hello"

char first = str.charAt(0); → H

Char Second = str.charAt(1); → E

• charAt()

(11) Absolute Value : Math.abs()

int num = 10;

int abs = Math.abs(num);

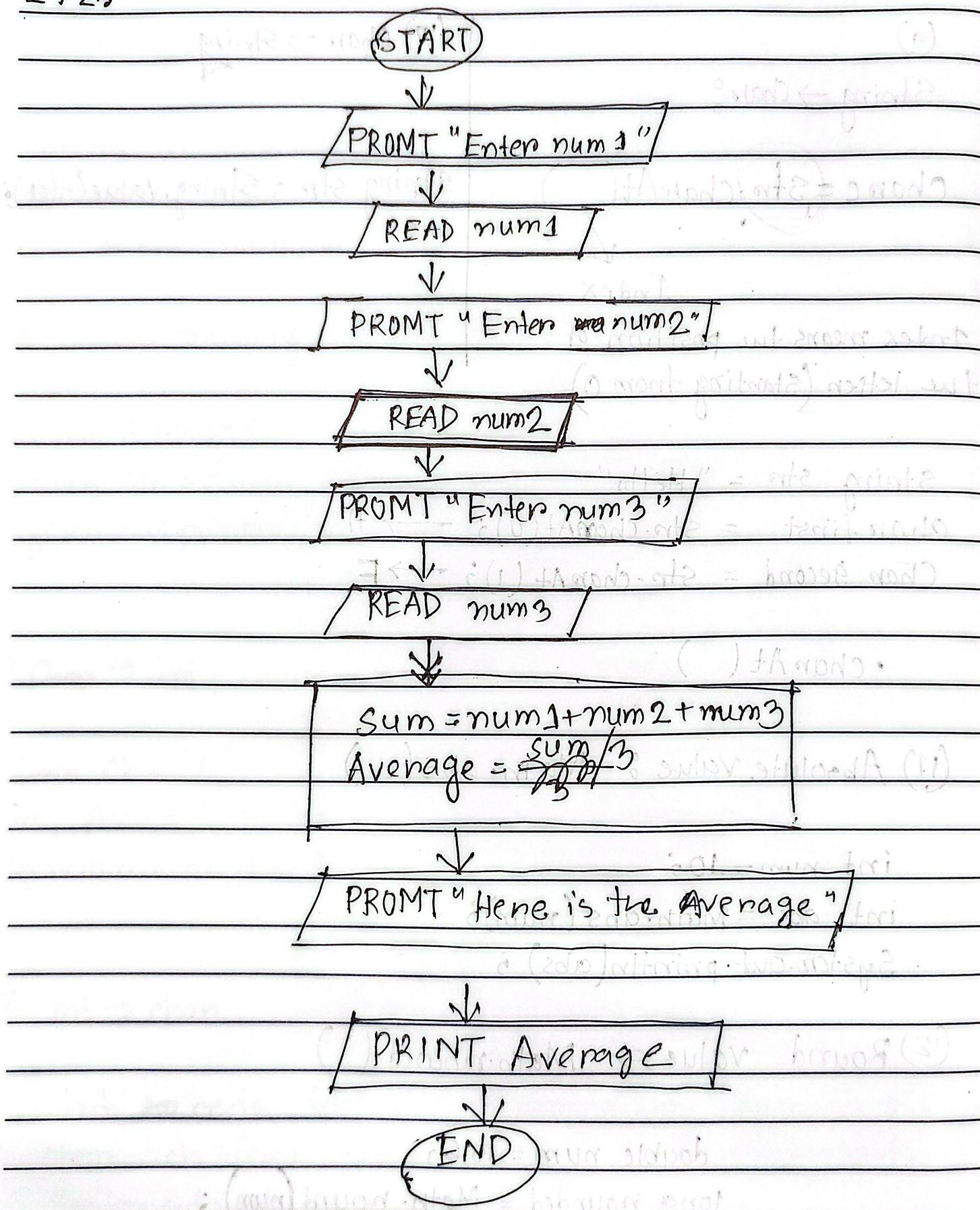
System.out.println(abs);

(12) Round value ⇒ Math.round()

double num = 15.6;

long rounded = Math.round(num);

2.7.25



Subject: _____

Qwize

Flowchart

Data and Variables, Operations

Tracing

Date:

operators

* position from right \Rightarrow

1st $\Rightarrow \text{num} \% 10$

2nd $\Rightarrow (\text{num}/10) \% 10$

3rd $\Rightarrow (\text{num}/100) \% 10$

4th $\Rightarrow (\text{num}/1000) \% 10$

7.7.25] (Tutorial)

Bitwise operators
for

1 & 1 = ?
OR(1) AND(&)

0 0 = 1	0 0 = 0
1 0 = 1	1 0 = 0
0 1 = 1	0 1 = 1
1 1 = 1	1 1 = 1

1011 & 1100

0011	1011
0011	1100

1000

& \rightarrow Both statement need to be true

* $\&$ \rightarrow one was true to be true

(~~1 > 0~~) & (5 == 0)

((1 > 0) & (5 == 0))
(tsp)

BMACE

Subject: _____

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* For same type of operations → left to right
self to right → left, take

{ Highest priority to (Bracket) > multiplicative (*, /, %) >
additive (+, -) > comparison (<, >),
equality (==, !=) > && & > ||

(5 * (5 + 5 / 5% (5 * 5)))

(5 * (5 + 5 / 5% 25)).

= (5 * (5 + 1% 25))

= 5 * (5 + 1)

= 5 * 6 = 30

5) 1 (0
0
—
0

int man = sc.nextInt(); X = 100

int wife = man * .25f W = 25

son = man * .50f S = 50

3rd of basic translate into English

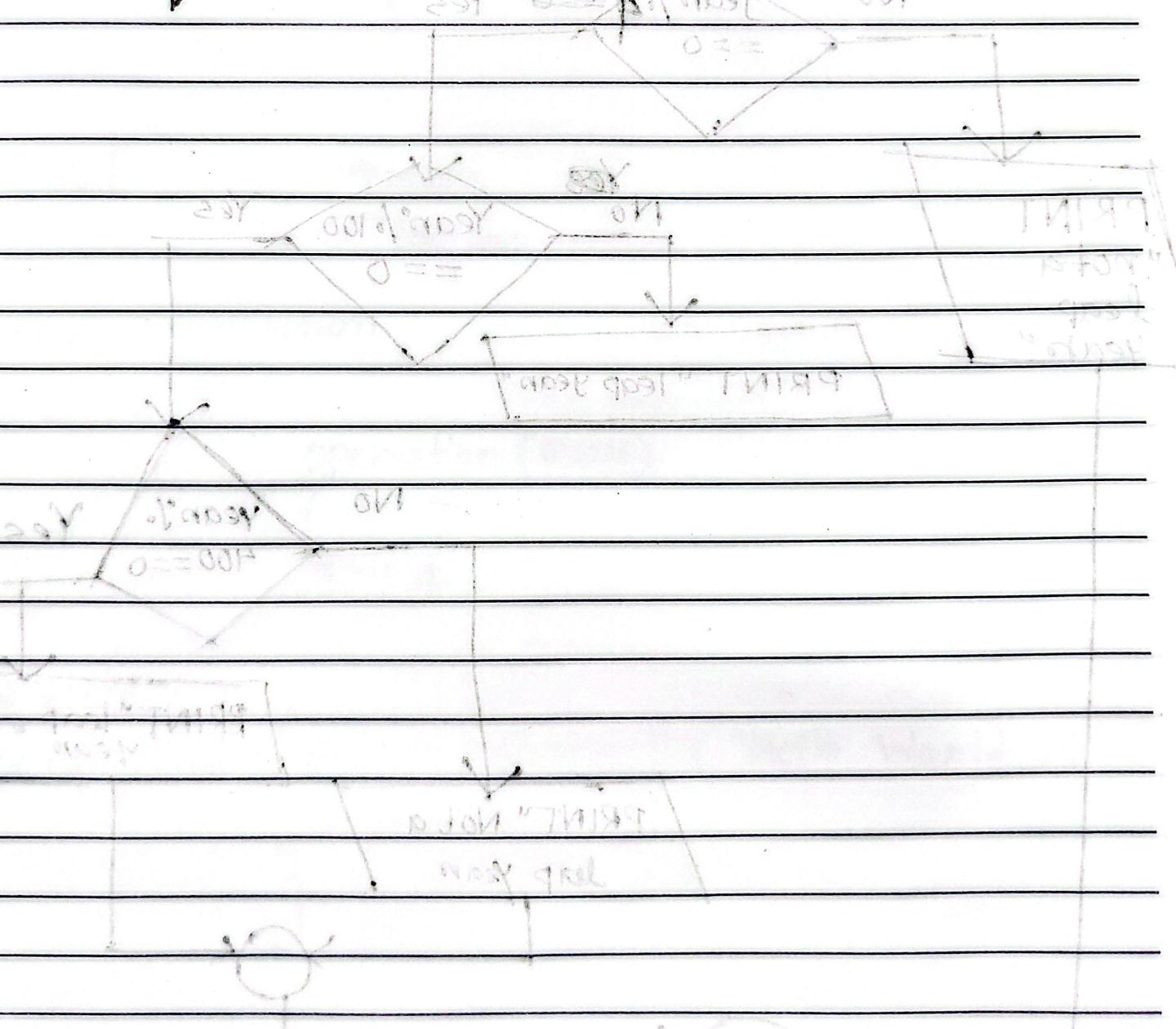
Answer:

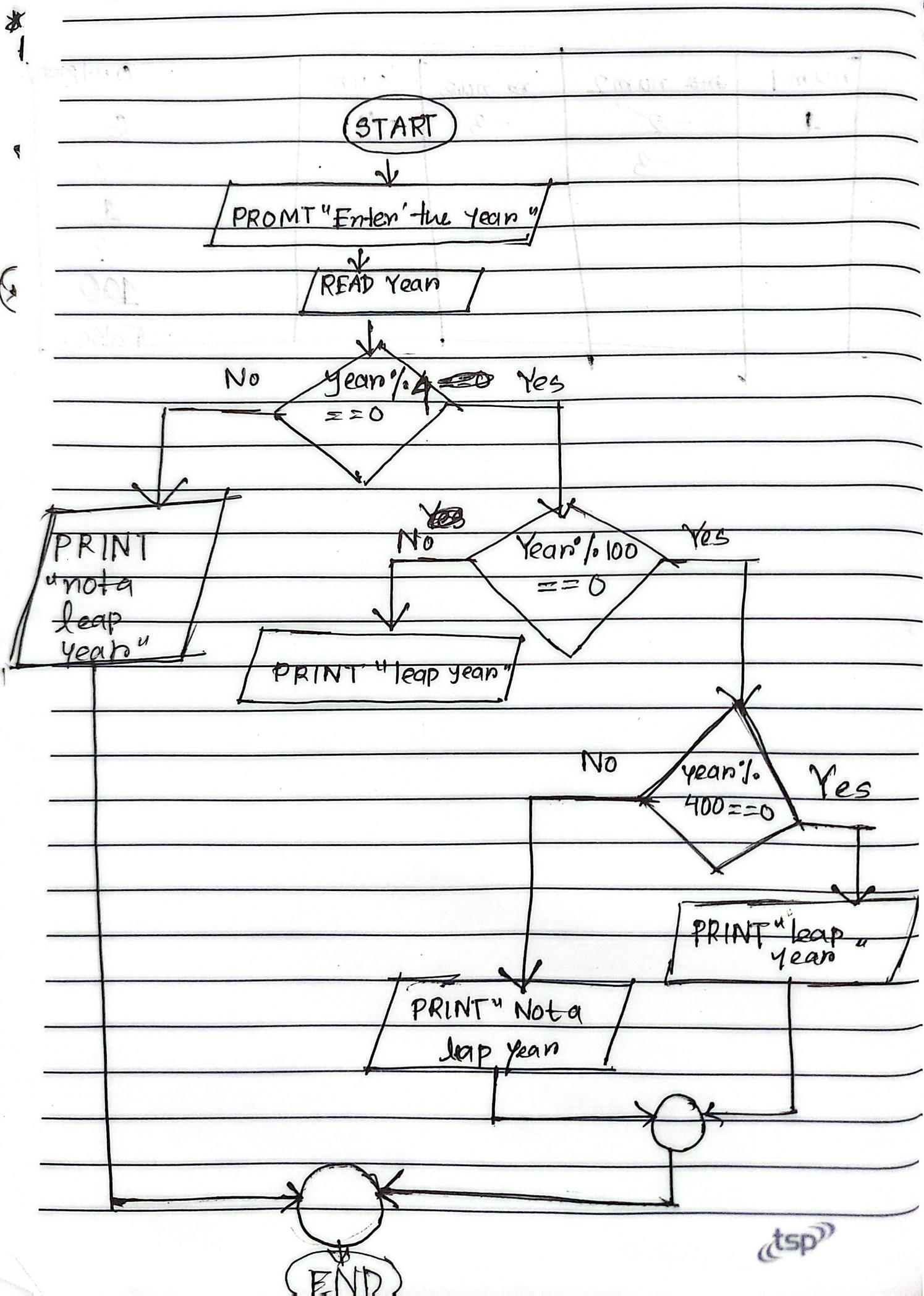
tsp

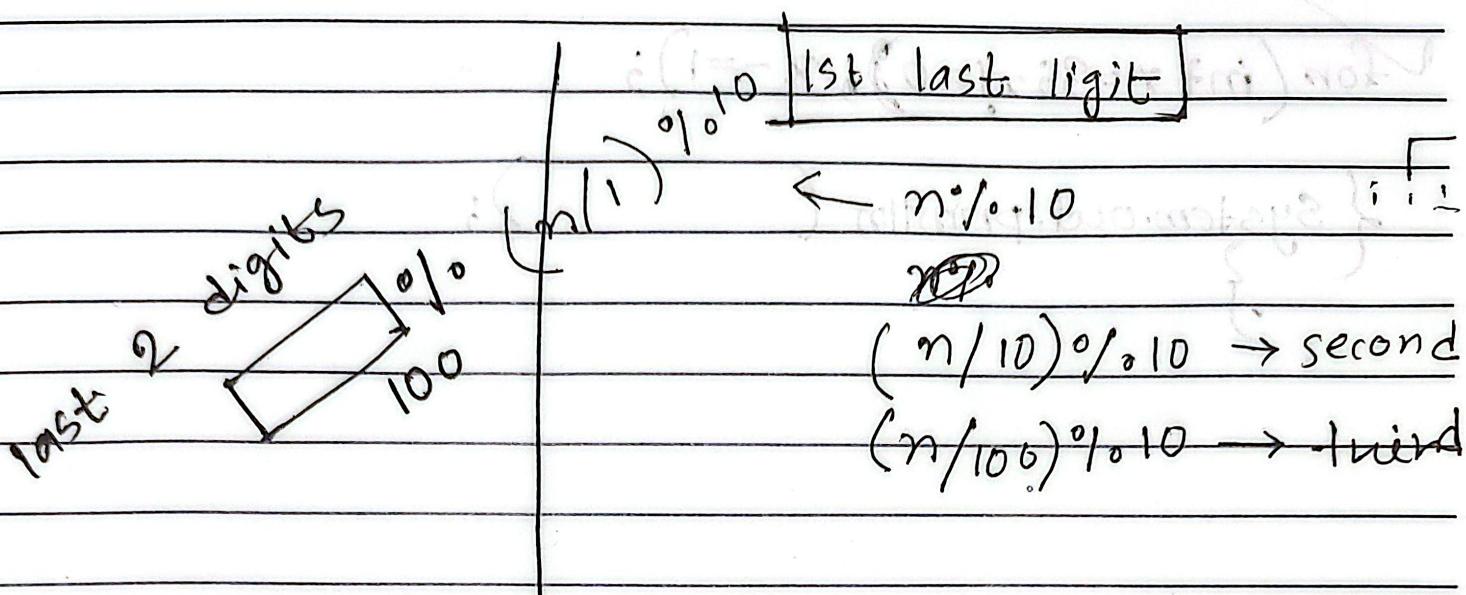
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num 1	num 2	num 3	sum	Output
1	-2	-3	1 + -4	6
	-3			-3
				1
				-3
				100
				False.







9.7.25

→ while

→ For loop

$x = 50$ condition
 while ($x > 0$) {
 operation (RUN)
 } ()
 $x -= 1$

```
int x = 3;  

while (x != 0) { System.out.println("Hello World");  

  x -= 1;  

}
```

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for ($\{ \text{int } x = 3; x > 0 \}$, $x - 1$) ;

{ System.out.println (); }

new < code ()

new < code ()

right ←

good right ←

left ←

new < code ()

{ (0 < k) else }

(n!) recursive

()

$k = -n$

{ (block off) recursive - no step } $(0 = 1 \cdot n)$

$k = -n$

4 100 400

```

import java.util.*;
public class Year {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the year");
        int year = sc.nextInt();
        if (year % 4 == 0) {
            System.out.println("Leap Year");
        } else if (year % 100 == 0) {
            if (year % 400 == 0) {
                System.out.println("Leap Year");
            } else {
                System.out.println("Not a leap year");
            }
        }
    }
}

```

