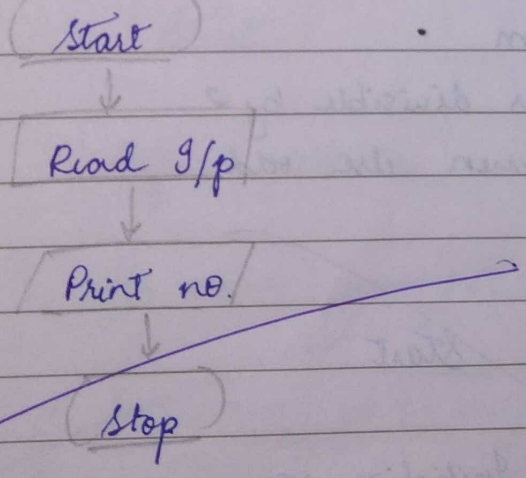
1. import java.util.Scanner;

```
public class HelloWorld {
    public static void main (String[] args) {
        Scanner reader = new Scanner (System.in);
        System.out.print ("Enter no.");
        int num = reader.nextInt();
        System.out.println (num);
    }
}
```

Algorithm:

1. Start
2. Create reader instance for I/p
3. Read no. from user
4. Print no.
5. Stop

Flowchart:



→ Enter no.
5
5

```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.ex1
Anagh.B.Deshpande(1BM22CS037)
enter no.
5
5
```

~ even / odd

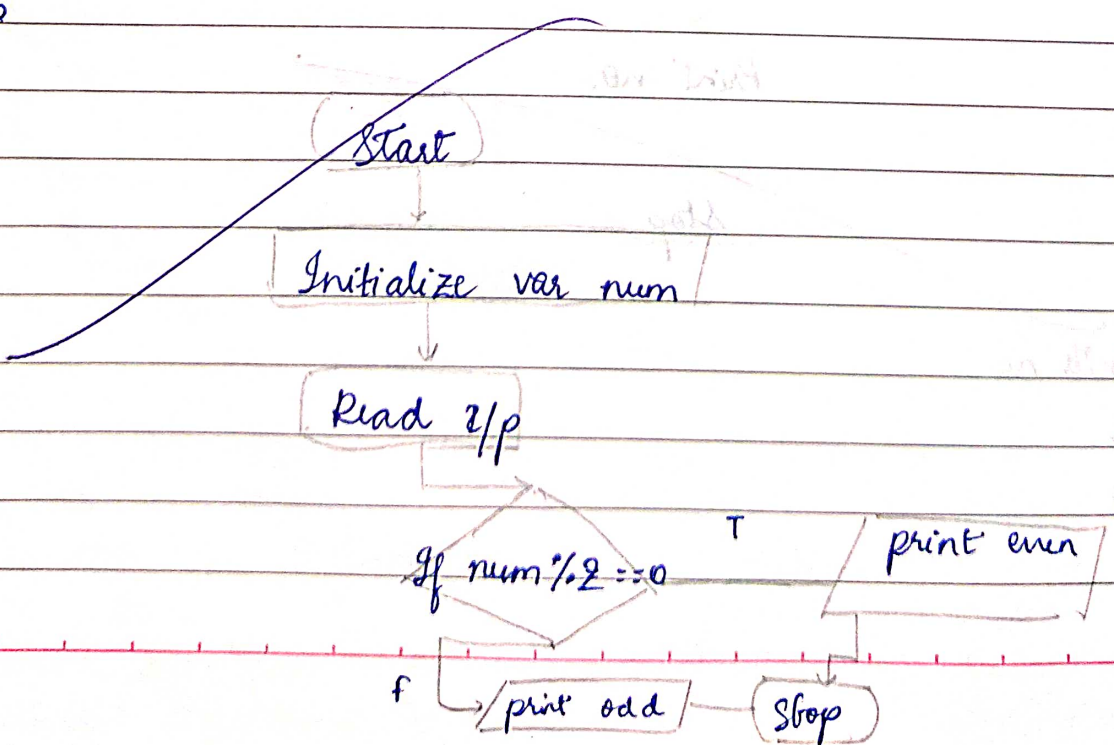
→
```
import java.util.Scanner;
public class Ex
{
    public static void main (String args[])
    {
        int num;
        System.out.print ("Enter Int no.");
        Scanner ip = new Scanner (System.in);
        num = in.nextInt();
        if (num%2 == 0)
            System.out.println ("Even");
        else
            System.out.println ("odd");
    }
}
```

Output:
Enter Int no.
5
Odd

Algorithm:

1. Start
2. Define Int num
3. Store Int in num
4. Check if num is divisible by 2
5. If true print even else odd
6. Stop

Flowchart:



```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.ex2
Anagh.B.Deshpande(1BM22CS037)
enter no.
5
odd
```

3 Right Δ^le Star Pattern

```
public class Ex {
    public static void main (String args[]) {
        int row, col, nor = 8;
        for (row=0; row< nor; row++)
        {
            for (col=0; col<= row; col++)
            { System.out.print("*"); }
            System.out.print();
        }
    }
}
```

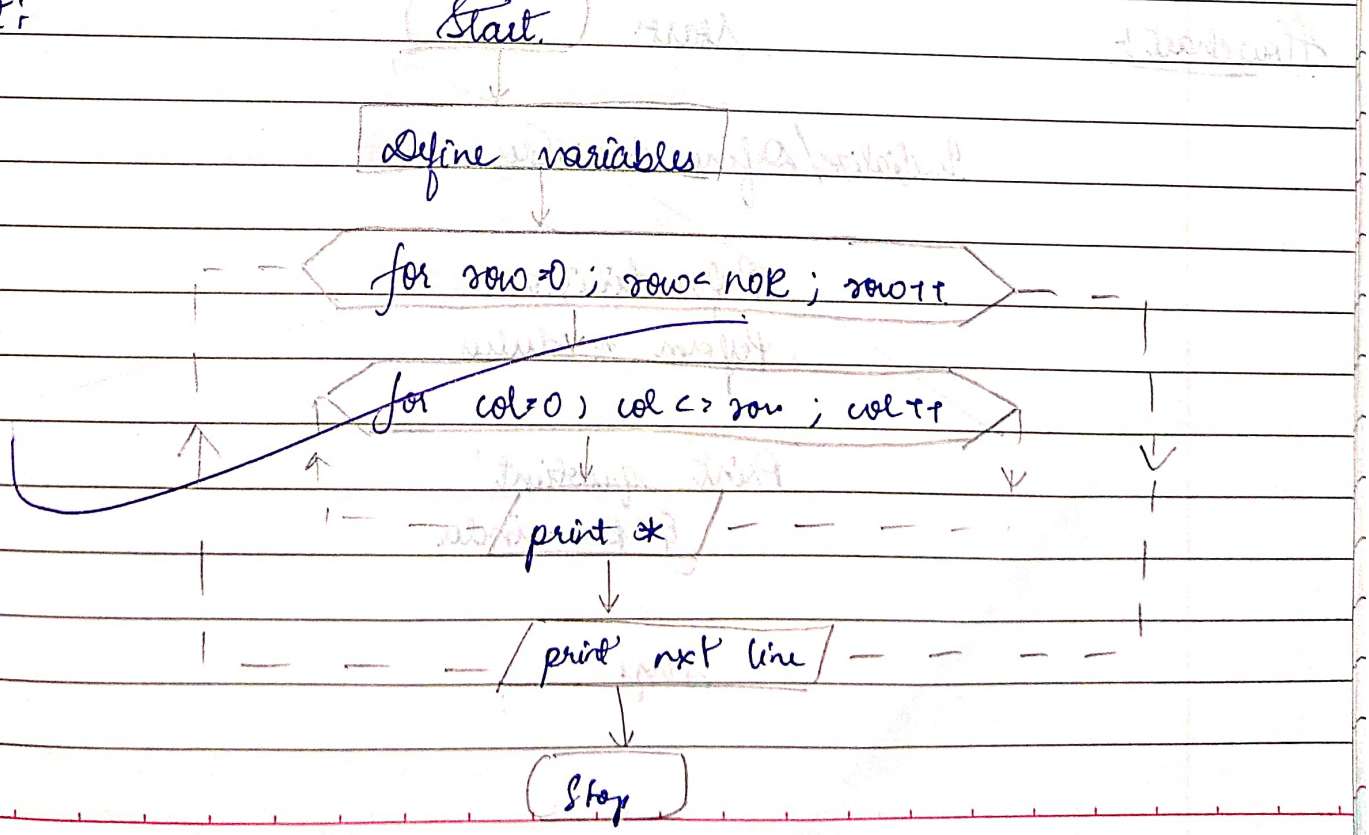
Algorithm :

1. Start
2. Define variables
3. Use for loop to print * & next line
4. Stop

Output :

```
*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * * * *
* * * * * * * *
```

Flowchart :



```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.ex3
Anagh.B.Deshpande(1BM22CS037)
*
**
***
****
*****
******
*******
********
```

4. Quotient/Reminder

```
public class Ex {
    public static void main (String[] args[]) {
        int num1 = 15 , num2 = 2 ;
        int q = num1 / num2 ;
        int r = num1 % num2 ;
        System.out.println(" Quotient = " + q);
        System.out.println(" Rem " + r); }
    }
```

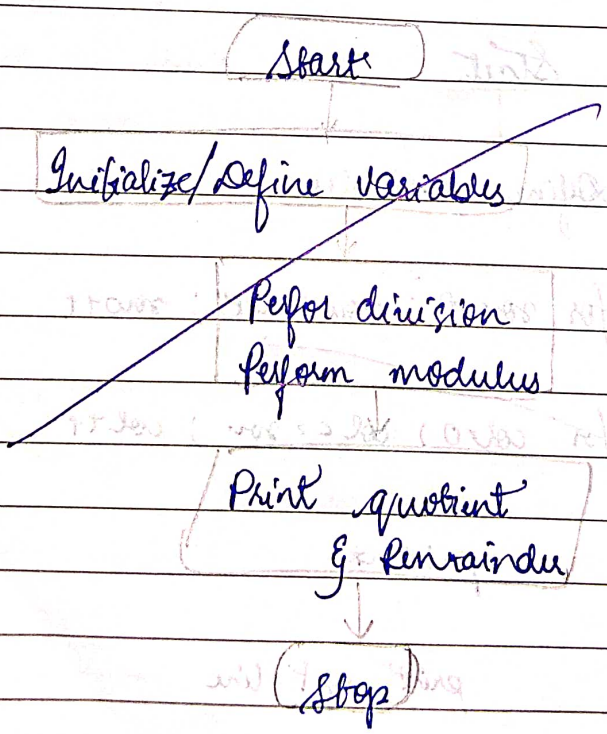
Algorithm :

1. Start.
2. Define variables
3. Perform num1 / num2
4. Perform num1 % num2
5. Print quotient & remainder
6. Stop.

Output :

Quotient = 7
Remainder = 1

Flowchart :



```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.ex4
Anagh.B.Deshpande(1BM22CS037)
number are 15 and 2
quotient: 7
remainder: 1
```

5. Multiplication :

```
public class Demo {
    public static void main (String args[]) {
        Scanner sc = new Scanner (System.in)
        int n1 = sc.nextInt();
        float n2 = sc.nextInt();
        sc.close();
        int prod = n1 * n2;
        System.out.println("O/p = " + prod); }
    }
```

Algorithm :

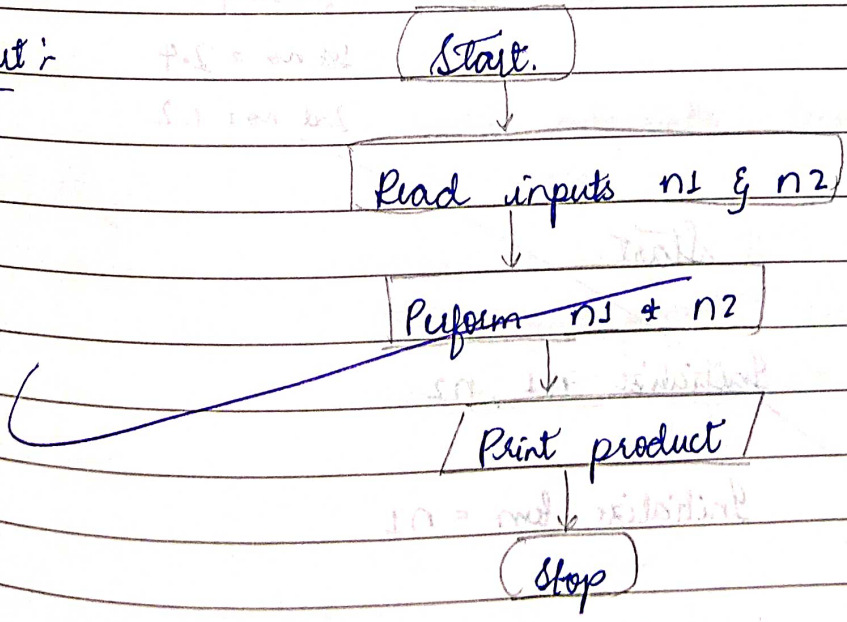
1. Start
2. Define / Read variable n1 & n2
3. Perform n1 * n2
4. Print product
5. Stop.

Output :

5
2

O/p = 10

Flowchart :



```
C:\Users\abdes\OneDrive\Documents\Java>javac java_code/ex6.java

C:\Users\abdes\OneDrive\Documents\Java>java java_code.ex6
Anagh.B.Deshpande(1BM22CS037)
enter no.
5
2
prod: 10
```

Date / /

6. Tem Swapping

```
public class Ex {
    public static void main (String args[]) {
        float n1 = 1.2f , n2 = 2.4f ;
        System.out.println (" 1st no. " + n1) ;
        System.out. println (" 2nd no. " + n2) ;

        float tem = n1 ;
        n1 = n2 ; n2 = tem ;
        System.out.println (" After Swap\n" + " 1st no. " + n1 +
                            " 2nd no\n" + n2) }
    }
```

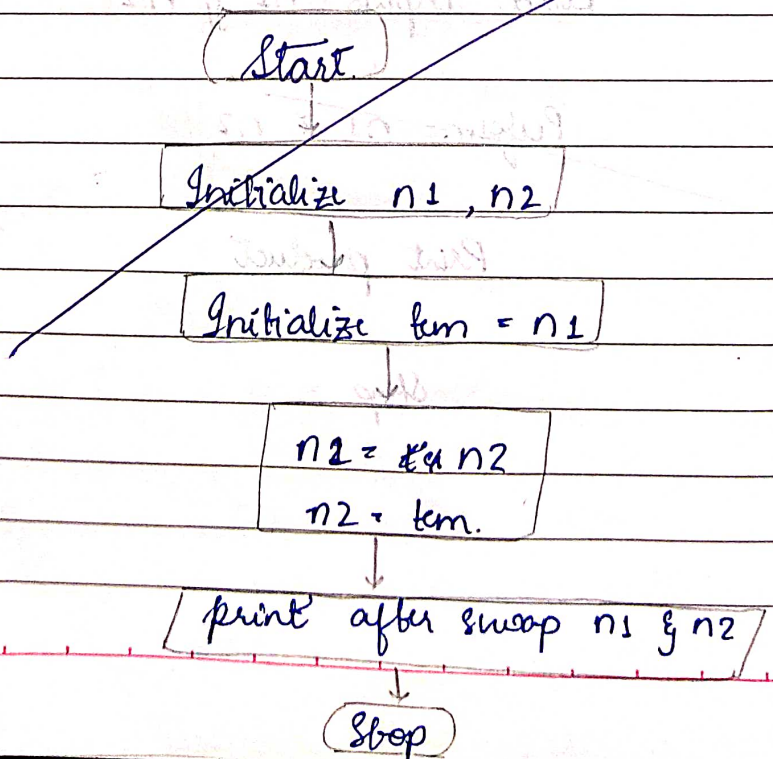
Algorithm:

1. Start.
2. Initialize variable n1, n2
3. Initialize new vari tem
4. Swap no.
5. Print no.
6. Stop.

Output:

1st no. = 1.2
2nd no = 2.4
After Swap
1st no = 2.4
2nd no: 1.2

Flowchart:



```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.ex5
Anagh.B.Deshpande(1BM22CS037)
1st no.: 1.2
2nd no.: 2.4
after swap:
 1st no.: 2.4
2nd no.: 1.2
```

1. Quadratic Equation :-

→
```
public class Demo {
    public static void main (strings args[]) {
        float a,b,c,d;
        double r1, r2;
        Scanner sc = new Scanner (System.in);
        a = sc.nextFloat();
        b = sc.nextFloat();
        c = sc.nextFloat();
        d = b*b - 4*a*c;
        if (d>0)
            System.out.println("Real & Distinct roots");
            r1 = (-b + Math.sqrt(d)) /(2*a);
            r2 = (-b - Math.sqrt(d)) / (2*a);
            System.out.println("Roots are" + r1 + "root 2" + r2);
    else if d==0
        System.out.println("Roots are Equal");
        System.out.println("r1 :r2=" + -b/2*a);
    else
        System.out.println("Imaginary Roots");
        r1 = -b/2a;
        r2 = math.sqrt(d)/(2*a);
        System.out.println("roots are " + "r1" + " + r2);
        System.out.println( r1 "+-" + r2);
                                    }
    }
```

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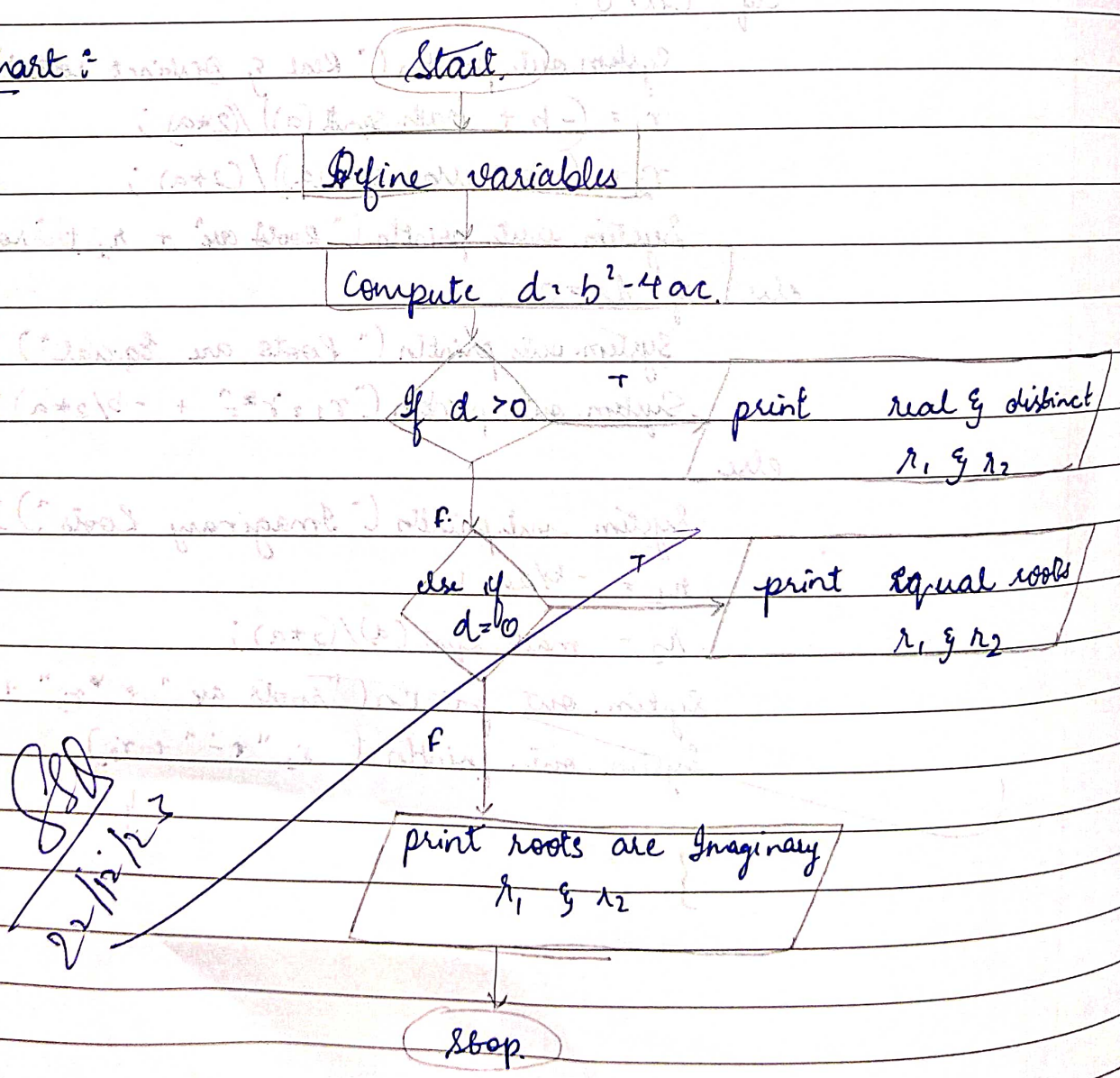
Date / /

Algorithm:

1. Start.
2. Initialize variables
3. Compute $d = b^2 - 4ac$
4. If $d > 0$, print real & distinct
5. Print r_1 & r_2
6. If $d = 0$, print real & equal
7. Print r_1 & r_2
8. If $d < 0$, print Imaginary
9. Print r_1 & r_2
10. Stop

Flowchart:



DOMS | Page No.
Date / /

Output :-

1.) 2
5
3

Roots are clear & distinct

$R_1 = -1.0$

$R_2 = -1.5$

2.) 2
4
5

Imaginary Roots

$R_1 = -2 + i$

$R_2 = -2 - i$

3.) 1
2
1

Roots are equal

$R_1 = R_2 = -1$

$x^2 + 2x + 1$

$(x^2 + x) + (x + 1)$

$x(x+1) + 1(x+1)$

```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.Ad
Anagh.B.Deshpande(1BM22CS037)
2
5
3
Roots are real and distinct
R1 = -1.0
R2 = -1.5

C:\Users\abdes\OneDrive\Documents\Java>java java_code.Ad
Anagh.B.Deshpande(1BM22CS037)
1
4
5
Imaginary Roots
R1 = NaN
R2 = NaN
```

```
C:\Users\abdes\OneDrive\Documents\Java>java java_code.Ad
Anagh.B.Deshpande(1BM22CS037)
1
2
1
Roots are Real and Equal
R1 = R2 = -1.0
```