Lab - I

Pankaj Gupta
1BM19CS110
Batch-1

Algorithm:

step 1: Input the value of a, b, c

step 2: Calculate d = b*b - 4*a*c

step 3: If (d<0) Display "No Real solutions"
else if (d=0) display "Roots are real & equal"
and calculate the roots r1 = r2 = (-b/2*a)
else if (d>0) display "Roots are real & distinct"
and calculate the roots

$r_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2*a}$ $r_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2*a}$

step 4: Print r1 and r2

step 5: End algorithm.

Program:

```
/* Call these file as Roots.java */
import java.util.*;
class Roots {
public static void main(String args[]){
double a, b, c, d, r1, r2;
Scanner in = new Scanner(System.in);
System.out.println("Enter the co-efficients of
                    x^2, x and constant term");
a = in.nextDouble();
b = in.nextDouble();
c = in.nextDouble();
d = b*b - 4*a*c;
if(d>0){
r1 = (-b + Math.sqrt(d))/2*a;
r2 = (-b - Math.sqrt(d))/2*a;
```

```
    Syetem.out.println("Roote are real and dietinct");
    Syete.out.println("Roote are "+r1+" and "+r2);
}
elee if (d==0) {
r1 = r2 = -b/2*a;
Syetem.out.println("Roote are real and equal");
System.out.println("Roote are "+r1+"and "+r2);
}
elee if (d<0){
    Syetem.out.println("There are no real eolutione");
}
}
}
```

Output:

Enter the co-efficiente of x^2, x and conetant term

1
-6
5

Roote are real and dietinct

Roote are 5.0 and 1.0