WEEK 1:

Develop a Java program that prints all real solutions to the quadratic equation ax2+bx+c=0. Read in a, b, c and use the quadratic formula. If the discriminate b2-4ac is negative, display a message stating that there are no real solutions.

Source Code:

```
import java.util.Scanner;
class Quadratic {
   float d;
    Scanner sc = new Scanner(System.in);
    void solver()
        System.out.println("enter the values of a,b, and c");
        int a = sc.nextInt();
        int b = sc.nextInt();
        int c = sc.nextInt();
        if (a == 0) {
            System.out.println("invalid equation");
        else{
            d= b*b - 4*a*c;
            System.out.println(d);
            System.out.println("the solutions are");
            if(d>0){
                System.out.println("roots are unique ");
                double r1 = (-b+Math.sqrt(d))/(2*a);
                double r2 = (-b-Math.sqrt(d))/(2*a);
                System.out.println(r1 +" " + r2);
            if(d==0){
                System.out.println("roots are equal ");
                double r = -b/(2*a);
                System.out.println(r);
            if(d<0){
                System.out.println("There are no real roots" );
```

```
public class Main {
    public static void main(String[] args) {
        Quadratic q1 = new Quadratic();
        q1.solver();
    }
}
```

Output:

```
PS C:\Users\satis\OneDrive\Desktop\project> javac Main.java
PS C:\Users\satis\OneDrive\Desktop\project> java Main
enter the values of a,b, and c
2 3 6
-39.0
the solutions are
There are no real roots
PS C:\Users\satis\OneDrive\Desktop\project> javac Main.java
PS C:\Users\satis\OneDrive\Desktop\project> java Main
enter the values of a,b, and c
1 2 1
0.0
the solutions are
roots are equal
-1.0
PS C:\Users\satis\OneDrive\Desktop\project> javac Main.java
PS C:\Users\satis\OneDrive\Desktop\project> java Main
enter the values of a,b, and c
1 5 3
13.0
the solutions are
roots are unique
-0.6972243622680054 -4.302775637731995
```

Written Code & Output:

	Classmate Date Page	
	1.) Develop a Java	
	1.) Develop a Java program that prints all real solutions	
	a, b, c and sent artborte = 0. Read in	
	a, b, c and use the quadratec formula. If the	
	desiminant bi- 4ac is negative, display a message stating that there are no real after	
	vea solutions.	
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	float d;	
	Scanner Scz new Scanner (System ?n);	
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3	System out prently ("enter the values for a, b	
	and c");	
	int a = sc nextInt();	
	int b: sc. nextInt();	
	int c = sc nextInt();	
	it (a==0) {	
	System out paintin (" invalid equation");	
	3 else f	
d= b*b-4*a*c :		
	System out prently (d);	
	System out printin ("solutions are:");	
	et (d>0) {	
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a last	system out prentln (r1 + " + r2);	
	and another all	
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	Date Page
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- 0° k	System. out. peintln (" roots are equal');
ang-	double r = -b/(2*a);
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	16 (d(0) E
	System out prently ("There are no real nots");
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	Constant Stov
	Public class Mainf
8.D W	public static void main (string[] args){
	Quadratic 91 2 new Quadratic ();
	91. Solver();
	7
	Output:
1	enter the values of a, b, and c
	2 3 6
	-39.0 * 5*5* A - A*A - A
	the solutions are
	There are no real roots.
4	5/40- 15 0
9	Enter the values of a, b, c
19	2 a, b and c
1/2	a, b and c 1 1 5 3
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