Batch II
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1BM22CS260

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1) Develop a Java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadractic formula. If the discriminant b^2-4ac is negative, display a message stating that there are no real solutions.

```
import java.util.Scanner;
class Quadratic
{
    int a, b, c;
    double r1, r2, d;
    void getd()
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the coefficients of a, b, c");
        a = s.nextInt();
        b = s.nextInt();
        c = s.nextInt();
    }
    void compute()
    {
        while (a == 0)
        {
            System.out.println("Not a quadratic eqn");
            System.out.println("Enter a non zero number");
            Scanner s = new Scanner(System.in);
        }
        d = b*b - 4*a*c;
        if (d == 0)
        {
            r1 = (-b)/(2*a);
            System.out.println("Roots are equal");
            System.out.println("Root 1 = Root 2 = " + r1);
```

```
        }
        else if(d>0)
        {
            r1=((-b)+(Math.sqrt(d))/(double)(2*a);
            r2=((-b)-(Math.sqrt(d))/(double)(2*a);
            System.out.println("Roots are real and distinct");
            System.out.println("Root1 = "+r1+"Root2 = "+r2);
        }

        else if(d<0)
        {
            System.out.println("Roots are imaginary");
            r1=(-b)/(2*a);
            r2=Math.sqrt(-d)/(2*a);
            System.out.println("Root1 = "+r1+"+i"+r2);
            System.out.println("Root1 = "+r1+"-i"+r2);
        }
    }
}

class Quadratic main
{
    public static void main(String args[])
    {
        Quadratic q = new Quadratic();
        q.getd();
        q.compute();
    }
}
```