

```
import java.util.Scanner;  
class quad  
{
```

```
    public static void main (String args[])  
{
```

```
        System.out.println("Enter the coefficients  
        a, b & c of quadratic equation  
         $ax^2+bx+c=0$  and where a is not  
        0");
```

```
        Scanner sc = new Scanner(System.in);  
        double a = sc.nextInt();
```

```
        if (a == 0)  
        {
```

```
            System.out.println("a can't be zero")  
        }
```

```
        else  
        {
```

```
            double b = sc.nextInt();
```

```
            double c = sc.nextInt();
```

```
            double z = b*b - 4*a*c;
```

```
            Equation eq = new Equation();
```

```
            if (z < 0)  
            {
```

```
                System.out.println("There are  
                no real solutions");  
            }
```

```
            else if (z == 0)
```

```
            {
```

```
                System.out.println("The solution  
                are real and equal");  
            }
```

```
eq.check(a, b, c);  
eq.display();  
}
```

```
else  
{
```

```
System.out.println("The solutions are  
real and distinct");
```

```
eq.check(a, b, c);  
eq.display();  
}
```

```
}
```

```
}
```

```
}
```

```
class Equation  
{
```

```
double a;
```

```
double b;
```

```
double c;
```

```
double r1;
```

```
double r2;
```

```
void check(double a, double b, double c)  
{
```

```
    this.a = a;
```

```
    this.b = b;
```

```
    this.c = c;
```

```
    double z = Math.pow(b*b - 4*a*c, 0.5);
```

```
    r1 = (-b - z) / (2*a);
```

```
    r2 = (-b + z) / (2*a);
```

```
}
```

```
void display()
```

```
{
```

```
    System.out.println(r1);
```

```
    System.out.println(r2);
```

```
}
```

```
}
```