

Aditya Satish Kumar

1BNC81908191

DATE:

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

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

```
        double a, b, c, sum, root1, root2;
```

```
        Scanner in = new Scanner (System.in);
```

```
        System.out.println ("Enter the constants a, b, and c for the  
quadratic expression  $ax^2 + bx + c$ ");
```

```
        a = in.nextDouble();
```

```
        b = in.nextDouble();
```

```
        c = in.nextDouble();
```

```
        sum = (b*b) - (4*a*c);
```

```
        if (sum > 0)  
        {
```

```
            System.out.println ("Roots are real and unequal" + sum);
```

```
            root1 = (-b + Math.sqrt(sum)) / (2*a);
```

```
            root2 = (-b - Math.sqrt(sum)) / (2*a);
```

```
            System.out.println ("Roots are real and unequal." + root1 +
```

```
            root2);  
        }
```

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```
else if (sum == 0)
{
```

```
    System.out.println("Roots are real and equal." + sum);
```

```
    root1 = root2 = (-b)/(2*a);
```

```
    System.out.println("Roots of the quadratic equation are "
        + root1 "and" + root2);
```

```
}
```

```
else if (sum < 0)
{
```

```
    System.out.println("Roots are unreal" + sum);
```

```
}
```

```
}
```

```
}
```