

lab1prog.java - Notepad

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```
import java.util.Scanner;
```

```
import java.lang.Math;
```

```
class QuadraticEquation
```

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

```
{
```

```
    double a,b,c;
```

```
    double d,r1,r2;
```

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

```
    System.out.println("Enter a,b,c:");
```

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

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

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

```
  
    d=b*b-4*a*c;
```

```
    if(d>0)
```

```
{
```

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

```
    r1=(-1*b+Math.sqrt(d))/(2*a);
```

```
    r2=(-1*b-Math.sqrt(d))/(2*a);
```

```
    System.out.printf("root 1=%.2f root 2=%.2f",r1,r2);
```

```
}
```

```
else if(d==0)
```

```
{
```

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

```
    r1=(-1*b)/(2*a);
```

```
    r2=r1;
```



```

double d,r1,r2;
Scanner sc=new Scanner(System.in);
System.out.println("Enter a,b,c:");
a=sc.nextDouble();
b=sc.nextDouble();
c=sc.nextDouble();

d=b*b-4*a*c;
if(d>0)
{
    System.out.println("Roots are real and unequal");
    r1=(-1*b+Math.sqrt(d))/(2*a);
    r2=(-1*b-Math.sqrt(d))/(2*a);
    System.out.printf("root 1=%.2f root 2=%.2f",r1,r2);
}

else if(d==0)
{
    System.out.println("Roots are real and equal");
    r1=(-1*b)/(2*a);
    r2=r1;
    System.out.printf("root 1=%.2f root 2=%.2f",r1,r2);
}

else
{
    System.out.println("Roots are imaginary as d("+d+")"+"is neagtive therefore no real solution");
}
}

```


Command Prompt

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
1 2 1
```

```
Roots are real and equal
```

```
root 1=-1.00 root 2=-1.00
```

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
1 5 6
```

```
Roots are real and unequal
```

```
root 1=-2.00 root 2=-3.00
```

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
78 56 64
```

```
Roots are imaginary as  $d(-16832.0)$  is neagtive therefore no real solution
```

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
1 2 1
```

```
Roots are real and equal
```

```
root 1=-1.00 root 2=-1.00
```

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
1 5 6
```

```
Roots are real and unequal
```

```
root 1=-2.00 root 2=-3.00
```

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
78 56 64
```

```
Roots are imaginary as  $d(-16832.0)$  is neagtive therefore no real solution
```

```
C:\Users\User\Desktop>java Quadraticequation
```

```
Enter a,b,c:
```

```
1.1 2.3 5.6
```

```
Roots are imaginary as  $d(-19.35)$  is neagtive therefore no real solution
```

```
C:\Users\User\Desktop>
```

