Roots.java - Notepad

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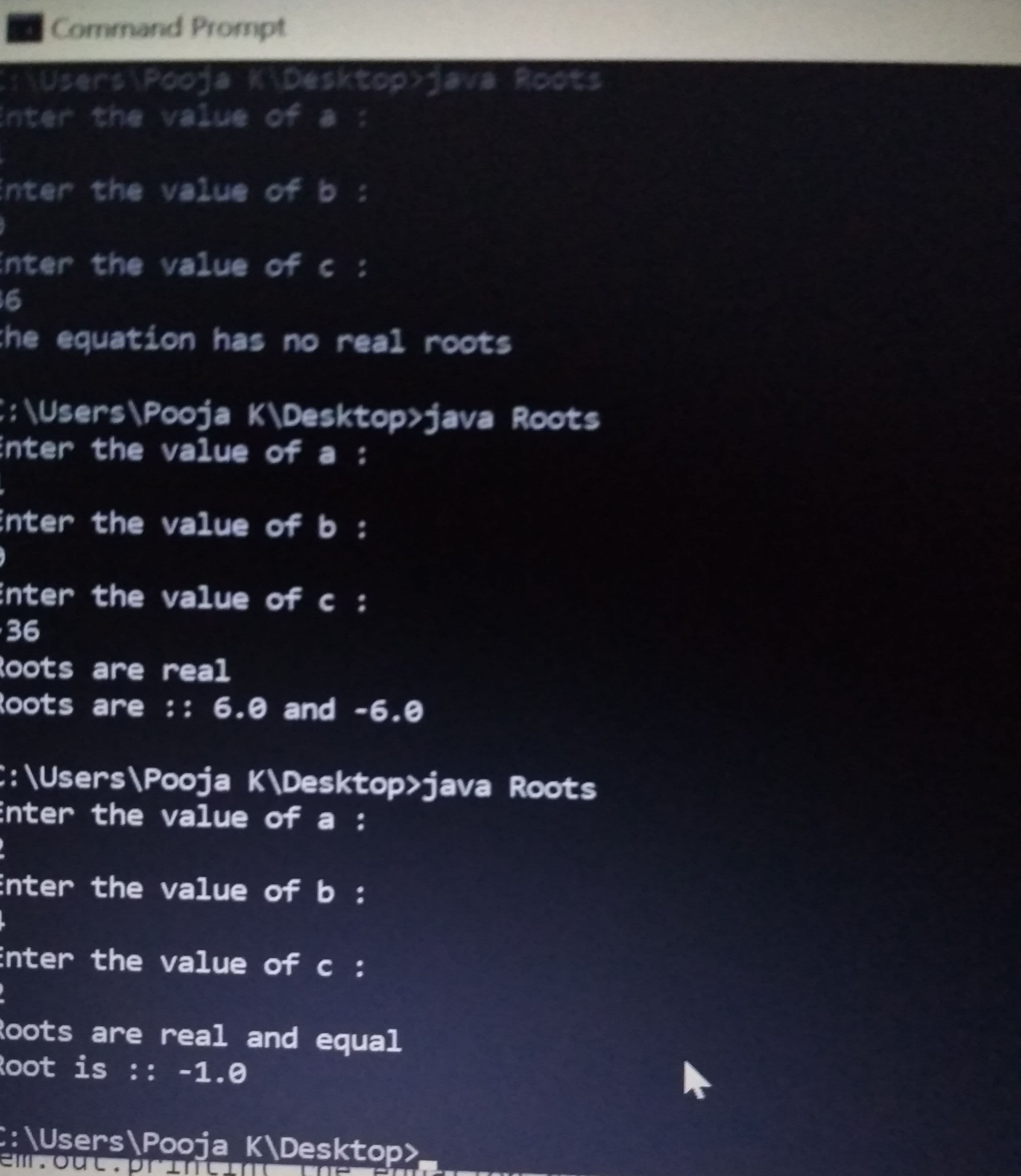
```
import java.util.*;
class Roots {
public static void main(String args[]){
double r1= 0, r2= 0;
Scanner sc = new Scanner(System.in);
System.out.println("Enter the value of a :");
double a = sc.nextDouble();

System.out.println("Enter the value of b :");
double b = sc.nextDouble();

System.out.println("Enter the value of c :");
double c = sc.nextDouble();

double determinant = (b*b)-(4*a*c);
double sqrt = Math.sqrt(determinant);

 if(determinant>0){
 r1= (-b + sqrt)/(2*a);
 r2 = (-b - sqrt)/(2*a);
System.out.println("Roots are real");
 System.out.println("Roots are :: "+ r1 +" and "+r2);
}
else if(determinant == 0){
System.out.println("Roots are real and equal");
 System.out.println("Root is :: "+(-b)/(2*a));
}
else if (determinant<0){
System.out.println("the equation has no real roots");
      }
   }
}
```


Command Prompt
:\Users\Pooja K\Desktop>java Roots
nter the value of a :
nter the value of b :
nter the value of c :
6
he equation has no real roots
:\Users\Pooja K\Desktop>java Roots
nter the value of a :
nter the value of b :
nter the value of c :
36
oots are real
oots are :: 6.0 and -6.0
:\Users\Pooja K\Desktop>java Roots
nter the value of a :
nter the value of b :
nter the value of c :
oots are real and equal
oot is :: -1.0
:\Users\Pooja K\Desktop>

2 oct

Date: / /

POOJA.K

1BM19CS111

Algorithm

Input values of a, b, c.
Calculate determinant and square root of determinant.
if (determinant > 0), then print roots are real and $r1 = \frac{(-b + sqrt(D))}{2a}$ and

$r2 = \frac{(-b - sqrt(D))}{2a}$

if (determinant = 0), then print ~~roots~~ ~~are~~ are real and equal.

$root = \frac{-b}{2a}$.

if (determinanant < 0) then print there are no real roots.

pooja.K

Date: / /

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Pooja-K
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// find roots of quadratic equation

```
import java.util.*;
class Roots {
public static void main (String args[]) {
double r1=0, r2=0;
Scanner sc = new Scanner (System.in);
System.out.println("Enter the value of a :");
double a = sc.nextDouble();
System.out.println("Enter value of b: ");
double b = sc.nextDouble();
System.out.println("Enter value of c: ");
double c = sc.nextDouble();

double determinant = (b*b) -(4*a*c);
double sqrt = Math.sqrt(determinant);

if(determinant >0) {
 r1 = (-b+sqrt)/(2*a);
 r2 = (-b-sqrt)/(2*a);
 Sys.out(" Roots are real ");
  System.out (" Roots are :: "+r1+"and"+r2);
    }
else if (determinant ==0) {
Sys:out (" Roots are real and equal");
System.out.println(" Root is :: "+(-b)/(2*a));}
 else if ( determinant <0) {
Sys.out (" the equation has no real roots");
    }
  }
}
```