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1BM19CS148
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Lab Program - 1

```
import java.util.Scanner;

public class Lab1 {
    public static void main (String[] args) {
    double a, b, c, root1, root2;
    double det;
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter the value of b, a, c");

    b = sc.nextDouble();
    a = sc.nextDouble();
    c = sc.nextDouble();

    det = b*b - 4*a*c;
    if (det > 0)
    {
        root1 = (-b + Math.sqrt(b*b - 4*a*c))/2*a;
        root2 = (-b - Math.sqrt(b*b - 4*a*c))/2*a;
        System.out.println("First root: " + root1);
        System.out.println("Second root: " + root2);
    }
    else if (det == 0)
    {
        root1 = -b/(2*a);
        System.out.println("Equal roots: " + root1);
    }
```

```
        else if (det < 0)
        {
            System.out.println("Imaginary");
        }
    }
}
```

Algorithm:

1. Start
2. double a, b, c, root1, root2, det
3. input a, b, c
4. det = b*b - 4*a*b
5. if (det > 0)

   root1 = (-b + $\sqrt{b*b-4ac}$) / 2*a
   root2 = (-b - $\sqrt{b*b-4ac}$) / 2*a
   print root1, root2

   else if (det == 0)

   root1 = -b / (2*a)
   print root1

   else
   print "Imaginary roots"

6. End

Expected outcome:

Enter the value b, a, c: 22 10 2

First root : -4.5012
Second root : -210.49