

## LAB Programs

lab 1: import java.util.Scanner;

public class lab1{

public static int det(int a, int b, int c){

int d =  $b^2 - 4 * a * c$ ;

return d;

}

public static void main(String[] args){

double r1, r2, real, imag;

Scanner sc = new Scanner(System.in);

int a = sc.nextInt();

int b = sc.nextInt();

int c = sc.nextInt();

int d = det(a, b, c);

if (d == 0){

r1 =  $-b + \text{Math.sqrt}(d * 1.0)$ ;

r2 =  $-b + \text{Math.sqrt}(d * 1.0)$ ;

System.out.println("the roots are real and equal:  
+ r1 + ", " + r2); }

if (d > 0){

r1 =  $-b + \text{Math.sqrt}(d * 1.0)$ ;

r2 =  $-b + \text{Math.sqrt}(d * 1.0)$ ;

System.out.println("the roots are real but  
not equal" + r1 + ", " + r2); }

if (d < 0){

real =  $-b/2$ ;

imag =  $\sqrt{-d}/2$ ;

System.out.println("the roots are imaginary"  
+ (real) + " + (" + (+1.0 \* imag) + "i), " +  
(real) + " + (" + (-1.0 \* imag) + "i)");

}}}