WEEK 1

}

Develop a Java program that prints all real solutions to the quadratic equation

ax2+bx+c = 0. Read in a, b, c and use the quadratic formula. If the discriminant b2-4ac is negative, display a message stating that there are no real solutions.

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CODE:
import java.util.Scanner;
import java.lang.Math;
class solution
   public static void main(String args[])
    Scanner s=new Scanner(System.in);
    System.out.println("Enter coefficients");
    float a=s.nextFloat();
    float b=s.nextFloat();
    float c=s.nextFloat();
if(a!=0){
double d=b*b-4*a*c;
if(d==0){
double r1=(-b)/(2*a);
System.out.println("Roots are equal and is equal to "+r1);
}else if(d<0){
double r1=(Math.sqrt(Math.abs(d)))/(2*a);
double r2=(-b)/(2*a);
System.out.println("Imaginary roots.Roots are "+r2+"+i"+r1+"and "+r2+"-i"+r1);
}else{
double r1=(-b+Math.sqrt(d))/(2*a);
double r2=(-b-Math.sqrt(d))/(2*a);
System.out.println("Roots are real and distinct. Roots are "+r1+" and "+r2);
}
else
System.out.println("Not a quadratic equation");
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public static void main (String args[]){
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System. out. println ("Enter coefficients");
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float b= s. nent Float ();
float c= s= next Float();
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Command Prompt
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C:\Users\bmscecse\Desktop\1BM21CS030>java Quadratic.java
Enter coefficients
1 1 1 1 I
Imaginary roots.Roots are -0.5+i0.8660254037844386and -0.5-i0.8660254037844386
C:\Users\bmscecse\Desktop\1BM21C5030>java Quadratic.java
Enter coefficients
1 2 3
Imaginary roots.Roots are -1.0+i1.4142135623730951and -1.0-i1.4142135623730951
C:\Users\bmscecse\Desktop\1BM21CS030>java Quadratic.java
Enter coefficients
2 5 2
Roots are real and distinct. Roots are -0.5 and -2.0
C:\Users\bmscecse\Desktop\1BM21CS030>java Quadratic.java
Enter coefficients
0 1 2
Not a quadratic equation
C:\Users\bmscecse\Desktop\1BM21CS030>java Quadratic.java
Enter coefficients
Roots are equal and is equal to -1.0
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