Program 3

Develop a C program to find all possible roots of a quadratic equation.

```
#include <stdio.h>
#include <conio.h>
#include <math.h>
void quadraticroots(float, float, float);
int main() {
    float p, q, r;
    printf("In a quadratic equation of form
     ax^2+bx+c=0, enter the coefficients a, b
    and c:- \n");
    scanf("%f %f %f", &p, &q, &r);
    quadratic roots(p, q, r);
    getch();
    return 0;
}
Void quadratic roots(float a, float b, float c)
{ float discriminant, root1, root2, realpart
    , imagpart;
  discriminant = pow(b,2) - 4*a*c;
if (discriminant > 0) {
    root1 = (-b + sqrt(discriminant))/(2*a);
    root2 = (-b - sqrt(discriminant))/((2*a));
    printf("root1 = %f and root2 = %f", root1,
     root2);
}
  else if (discriminant == 0) {
    root1 = root2 = -b/2*a;
    printf("root1 = root2 = %f", root1);
}
```

```
else {
    real part = -b / (2 * a);
    imagpart = sqrt(- discriminant) / (2 * a);
    printf("1st root = (%.f + %.f i) and
      2nd root = (%.f - %.f i), where i = (-1)^0.5
      ", real part, imagpart, real part,
       imagpart.);
}
return;
}
```