```
#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 a form ax^2+bx+c=0,enter the coefficients of a,b and c\n");
scanf("%f %f %f",&p,&q,&r);
quadraticroots(p,q,r);
getch();
return 0;
}
void quadraticroots(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
{
realpart=-b/(2*a);
imagpart=sqrt(-discriminant)/(2*a);
printf("1st root=(%f +%fi) and 2nd root=(%f -%fi),where i=(-1)^(0.5)",realpart,imagpart,realpart,imagpart);
}
return ;
}
```

Compile Result

```
in a quadratic equation of a fo
rm ax^2+bx+c=0,enter the coeffi
cients of a,b and c
5
8
9
1st root=(-0.800000 +1.077033i)
 and 2nd root=(-0.800000-1.0770
33i),where i=(-1)^(0.5)
[Process completed - press Ente
r]
```

Experiment Name / No.: 3. Program to find all possible roots of quadratic equation.

Camlin | Page No. | Date / /

```
#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 a form ax^2+bx+c
      =0, enter the coeffecients of a, b and
       c \n");
scanf("%f %f %f", &p, &q, &r);
quadratic roots(p, q, r);
getch();
return 0;
}
void quadraticroots(float a, float b, float c)
{
  float discriminant, root1, root2, real part, imag part;
  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);
```

Teacher's Signature:

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

Teacher's Signature