(7.) To find out the roots of a quadratic equation.

```
#include <stdio.h>
#include <conio.h>  #include<math.h>
void main()
{
  float a, b, c, dis, r1, r2, real, imag;
  clrscr();
  printf("Enter the value of a, b, c");
  scanf("%f %f %f", &a, &b, &c);
  dis = b*b - 4*a*c;
  if (dis==0)
  {
    printf("The roots are equal \n");
    r1 = (-b)/(2.0*a);
  }
  elseif (dis<0)
  {
    printf("The Roots are imaginary \n");
    real = (-b)/(2.0*a); dis = -dis;
    imag = sqrt(disc)/(2.0*a);
    disc = (-disc);
    printf("\n Root1 = %5.2f + i%5.2f", real,
                                    imag);
    printf("\n Root2 = %5.2f - i%5.2f",
                                real, imag);
    exit(0);
  }
  else
  { printf("The Roots are real & unequal.");
    r1 = (-b+sqrt(dis))/(2.0*a);
    r2 = (-b-sqrt(dis))/(2.0*a);
  }
printf("Roots are %f and %f", r1, r2); getch(); }
```

$$ax^2+bx+c=0$$

$$\alpha, \beta = \frac{-b \pm \sqrt{b^2-4ac}}{2.a}$$

① D==0
Booth roots are real & equal.

② D<0
Roots are imaginary.

③ D>0
Both roots are real & distinct.