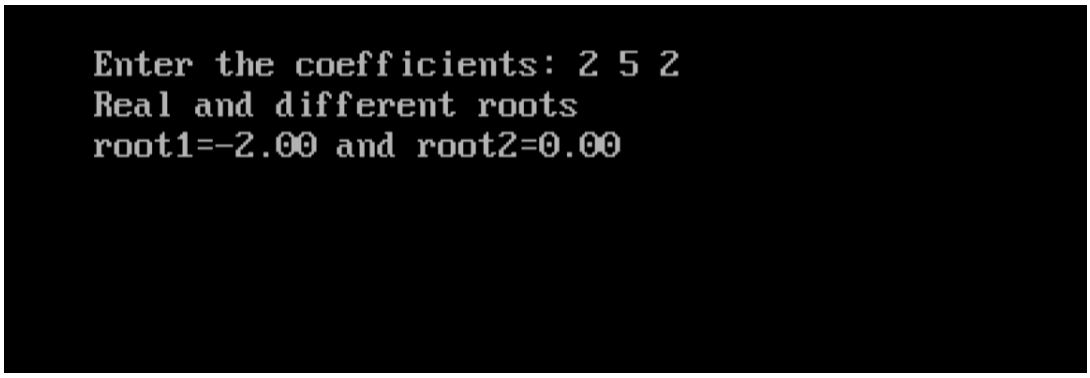
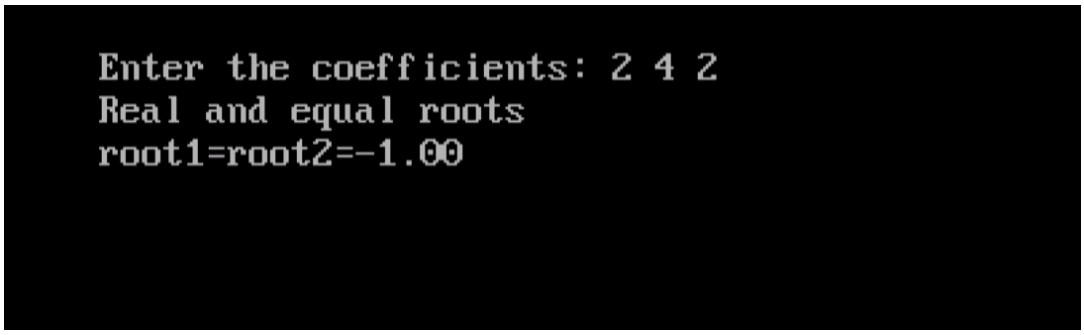
1.Develop a C program to find all possible roots of a quadratic equation

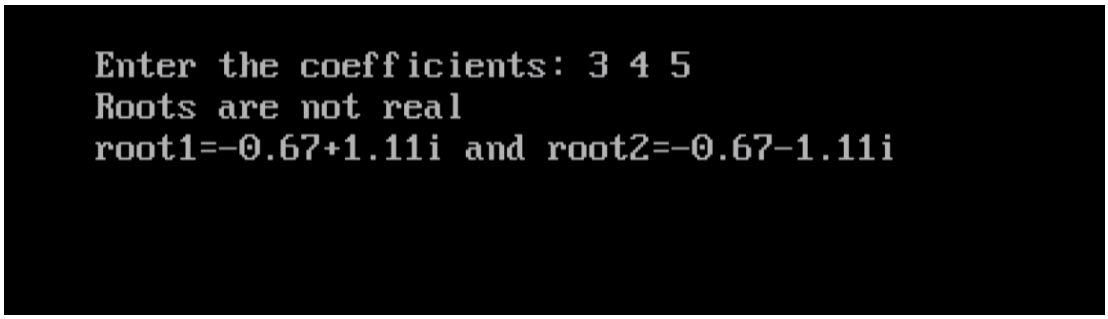
```
#include<stdio.h>
#include<conio.h>
#include<math.h>
double root(double a,double b,double c)
{
double discriminant,root1,root2,real_part,imaginary_part;
discriminant=(b*b)-4*a*c;
if(discriminant>0)
{
printf("Real and different roots\n");
root1=(-b+sqrt(discriminant))/(2*a);
root1=(-b-sqrt(discriminant))/(2*a);
printf("root1=%.2lf and root2=%.2lf",root1,root2);

}
else if(discriminant==0)
{
printf("Real and equal roots\n");
root1=root2=-b/(2*a);
printf("root1=root2=%.2lf",root1);
}
else
{
printf("Roots are not real\n");
real_part=-b/(2*a);
```

```
imaginary_part=sqrt(-discriminant)/(2*a);
printf("root1=%.2lf+%.2lfi and root2=%.2lf-
%.2lfi",real_part,imaginary_part,real_part,imaginary_part);


}
return 0;
}
void main()
{
double a,b,c;
clrscr();
printf("\nEnter the coefficients: ");
scanf("%lf %lf %lf",&a,&b,&c);
root(a,b,c);
getch();


}
```

OUTPUTS


Enter the coefficients: 2 5 2
Real and different roots
root1=-2.00 and root2=0.00

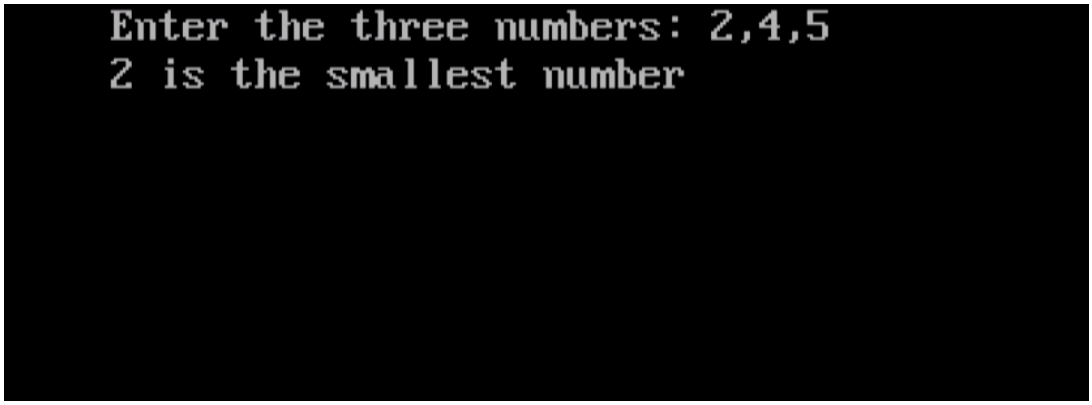

Enter the coefficients: 2 4 2
Real and equal roots
root1=root2=-1.00

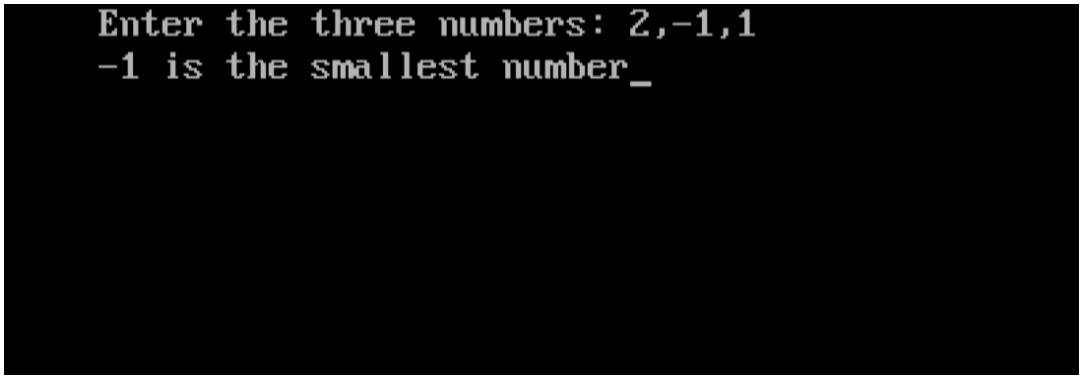

Enter the coefficients: 3 4 5
Roots are not real
root1=-0.67+1.11i and root2=-0.67-1.11i

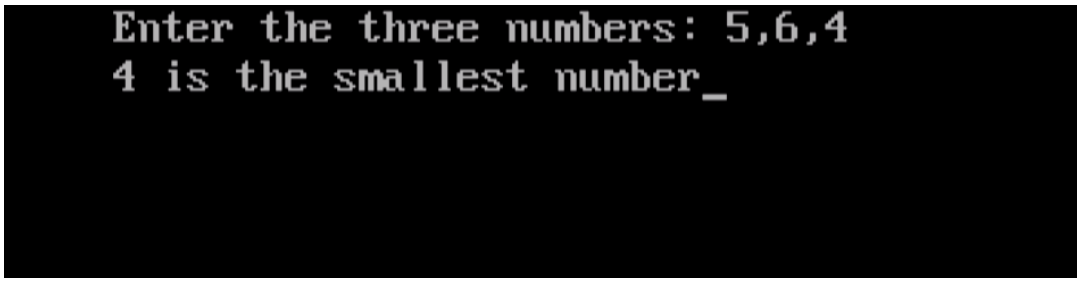
2.Ilustrate conditional branching statements to find the smallest of three numbers

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
printf("\Enter the three numbers: ");
scanf("%d,%d,%d",&a,&b,&c);
if(a<b && a<c)
printf("%d is the smallest number",a);
else if(b<c)
printf("%d is the smallest number",b);
else
printf("%d is the smallest number",c);
getch();
}
```

OUTPUTS


Enter the three numbers: 2,4,5
2 is the smallest number


Enter the three numbers: 2,-1,1
-1 is the smallest number_


Enter the three numbers: 5,6,4
4 is the smallest number_