

///2x2 Matrices Addition/Subtraction

```
#include<iostream.h>
#include<conio.h>
void main()
{
clrscr();
float a[2][2],b[2][2],c[2][2];
int i=0,j=0;
cout<<"enter 1st matrix:"<<endl;
for(i=0;i<2;i++)
for(j=0;j<2;j++)
{
cin>>a[i][j];
}
cout<<"enter 2nd matrix:"<<endl;
for(i=0;i<2;i++)
for(j=0;j<2;j++)
{
cin>>b[i][j];
}
cout<<"Resultant Matrix:"<<endl;
for(i=0;i<2;i++)
{
for(j=0;j<2;j++)
{
c[i][j]=a[i][j]+b[i][j];
cout<<c[i][j];
}
cout<<endl;
}
getch();
}
```

OUTOUT OF MATRICES ADDITION:

Enter 1st Matrix:

1 1

1 1

Enter 2nd Matrix:

2 2

2 2

Resultant Matrix:

3 3

3 3

///2x2 Matrices Subtraction

```
#include<iostream.h>
#include<conio.h>
void main()
{
clrscr();
float a[2][2],b[2][2],c[2][2];
int i=0,j=0;
cout<<"enter 1st matrix:"<<endl;
for(i=0;i<2;i++)
for(j=0;j<2;j++)
{
cin>>a[i][j];
}
cout<<"enter 2nd matrix:"<<endl;
for(i=0;i<2;i++)
for(j=0;j<2;j++)
{
cin>>b[i][j];
}
cout<<"Resultant Matrix:"<<endl;
for(i=0;i<2;i++)
{
for(j=0;j<2;j++)
{
c[i][j]=a[i][j]-b[i][j];
cout<<c[i][j];
}
cout<<endl;
}
getch();
}
```

OUTOUT OF MATRICES SUBTRACTION:

Enter 1st Matrix:

2 2

2 2

Enter 2nd Matrix:

2 2

2 2

Resultant Matrix:

0 0

0 0

///2x2 Matrices Multiplication

```
#include<iostream.h>
#include<conio.h>
void main()
{
clrscr();
float a[2][2],b[2][2],c[2][2];
int i=0,j=0,k=0;
cout<<"enter 1st matrix:"<<endl;
for(i=0;i<2;i++)
for(j=0;j<2;j++)
{
cin>>a[i][j];
}
cout<<"enter 2nd matrix:"<<endl;
for(i=0;i<2;i++)
for(j=0;j<2;j++)
{
cin>>b[i][j];
}
c[i][j]=0;
cout<<"Resultant Matrix:"<<endl;
for(i=0;i<2;i++)
{
for(j=0;j<2;j++)
{
c[i][j]=0;
for(k=0;k<2;k++)
c[i][j]=c[i][j]+a[i][k]*b[k][j];
cout<<c[i][j]<<"\t";
}
cout<<endl;
}
getch();
}
```

OUTOUT OF MATRICES MULTIPLICATION:

Enter 1st matrix:

1 1

1 1

Enter 2nd Matrix:

2 2

2 2

Resultant Matrix:

4 4

4 4

```
//Bisection/Regula-False/Secant Method
```

```
#include<iostream.h>
#include<conio.h>
#include<math.h>
#define f(x)(sin(x)-5*x+2)
```

```
void main()
```

```
{clrscr();
```

```
float a,b,t,n,sol,interval,i;
```

```
cout<<"Please enter value of a=";
```

```
cin>>a;
```

```
cout<<"please enter value of b=";
```

```
cin>>b;
```

```
cout<<"Number of Iterations=";
```

```
cin>>n;
```

```
i=0;
```

```
if(f(a)*f(b)<0)
```

```
{
```

```
do
```

```
{
```

```
sol=(a+b)/2;
```

```
if(f(a)*f(sol)<0)
```

```
b=sol;
```

```
else
```

```
a=sol;
```

```
i++;
```

```
interval=fabs(a-b)/2;
```

```
For Bisection: sol=(a+b)/2;
```

```
For Regula False:sol=(a*f(b)-b*f(a))/(f(b)-f(a));
```

```
For Secant: sol=b-(a-b)*f(b)/(f(a)-f(b));
```

```
}
```

```
while(interval>t&&f(sol)!=0&&i<n);
```

```
cout<<sol;
```

```
}
```

```
getch();
```

```
}
```

For Bisection,Put:

sol=(a+b)/2;

For Regula False,Put:

sol=(a*f(b)-b*f(a))/(f(b)-f(a));

For Secant put:

sol=b-(a-b)*f(b)/(f(a)-f(b));

```
//Trapezoid Rule
```

```
#include<iostream.h>
```

```
#include<math.>
```

```
#define f(x)(sin(x))
```

```
void main()
```

```
{
```

```
float a,b,sum,n,h;
```

```
int i;
```

```
cout<<"Enter Initial Limit of x (a):";
```

```
cin>>a;
```

```
cout<<"Enter Final Limit of x (b):";
```

```
cin>>b;
```

```
cout<<"Enter Number Of Intervals n:";
```

```
cin>>n;
```

```
h=(b-a)/n;
```

```
sum=(f(a)+f(b));
```

```
for(i=1;i<n;i++)
```

```
{
```

```
sum=sum+2*f(a+(i*h));
```

```
}
```

```
sum=sum*h/2;
```

```
cout<<sum;
```

```
getch();
```

```
}
```

```
//Simpson's 1/3 rule
```

```
#include<iostream.h>
```

```
#include<math.>
```

```
#define f(x)(sin(x))
```

```
void main()
```

```
{
```

```
float a,b,sum,n,h;
```

```
int i;
```

```
cout<<"Enter Initial Limit of x (a):";
```

```
cin>>a;
```

```
cout<<"Enter Final Limit of x (b):";
```

```
cin>>b;
```

```
cout<<"Enter Number Of Intervals n:";
```

```
cin>>n;
```

```
h=(b-a)/n;
```

```
sum=(f(a)+f(b));
```

```
for(i=1;i<n;i++)
```

```
{
```

```
if(i%2==0)
```

```
sum=sum+2*f(a+(i*h));
```

```
else
```

```
sum=sum+4*f(a+(i*h));
```

```
}
```

```
sum=sum*h/3;
```

```
cout<<sum;
```

```
getch();
```

```
}
```