1. **Write a program to compute ex =1+x+x2/2!+x3/3!+x4/4! Where x if given input. Take x>1.**

= #include <stdio.h>

int factorial(int num)

{

int fact=1;

for(int i=1;i<=num;i++)

{

fact=fact\*i;

}

return fact;

}

float power(float z,int p)

{

float y=1;

while(p>0)

{

y\*=z\*p;

p--;

}

return y;

}

int main()

float x,sum=1;

int n;

printf("enter value of x");

scanf("%f",&x);

if(x>1)

{

printf("\n enter value less then 1!");

return 1;

}

printf("enter no of terms");

scanf("%d",&n);

for("int i=0;i<=n;i++")

{

sum=sum+(power(x,i)/factorial(i));

}

printf("\n the value is %f\n",sum);

return 0;

}

**Output:-**

Enter value of x:0.5

Enter no of terms:5

The value is 2.648721

1. **Write a program to print the diagonal of a 4\*4 matrix. You have to print both the diagonal elements.**

**=** #include <stdio.h>

int main()

{

int matrix [4][4];

int i,j;

printf("enter elements of matrix 4\*4:\n");

for(int i=0;i<4;i++)

{

for(int j=0;j<4;j++) {

scanf("%d",& matrix[i][j]);

}

}

printf("first diagonal:\n");

for(int i=0;i<4;i++)

printf("%d",matrix[i][j]);

printf("second diagonal:\n");

for(int i=0;i<4;i++)

{

printf("%d",matrix[i][3-i]);

}

    return 0;

}

**Output:-**

Enter elements of matrix: 4\*4

1 2 3 4

5 6 7 8

9 10 11 12

13 14 15 16

First diagonal: 1,6 ,11,16

Second diagonal:4,7,10,13