epsilon=float(input("enter the value of epsilon error: "))

x=float(input("Enter the value of x:  "))

i=1

fact=1

F\_i=x

fact=fact\*((2\*i+1)\*(2\*i))

F\_i1=F\_i - (x\*\*(2\*i+1))/fact

F\_i1=x-x\*\*3/6

while abs(F\_i1-F\_i)>=epsilon:

    print(f"Iter {i} : ", abs(F\_i1-F\_i))

    F\_i=F\_i1

    i=i+1

    fact=fact\*((2\*i+1)\*(2\*i))

    if i % 2==0:

        F\_i1=F\_i1 + (x\*\*(2\*i+1))/fact

    else:

        F\_i1=F\_i1 - (x\*\*(2\*i+1))/fact

print("No. of terms:  ", i+1)

print("F\_i+1: ", F\_i1)