#include<iostream>

#include<cmath>

using namespace std;

//FUNCTION TO CALCULATE THE FACTORIAL OF A NUMBER

unsigned long long factorial(int n){

    if(n==0||n==1)

    return 1;

   else

   return n\*factorial(n-1);

}

//Function to calculate the Poisson probability mass function(PMF)

double poissonPMF(int k,double lambda){

    return exp(-lambda)\*pow(lambda,k)/factorial(k);

}

int main(){

    int k;

    double lambda;

    //INPUT PARAMETERS

    cout<<"Enter the value of k: ";

    cin>>k;

    cout<<"Enter the value of lambda: ";

    cin>>lambda;

    //calculate and display the poisson pmf

    double pmf=poissonPMF(k,lambda);

    cout<<"P(X= "<<k<<" ) ="<<pmf;

    return 0;

}