```
SIMPSON ORTHOGONALITY
clc
clear
funcprot(0)
function pl=P(n, x)
   sum=0
   for m=0:n/2
      den=(2^n)*factorial(m)*factorial(n-m)*factorial(n-2*m)
      sum=sum+(((-1)^m)*factorial(2*n-2*m)*(x^(n-2*m)))/den
   end
   pl=sum
endfunction
x0=-1
xn=1
n=300
A=input("enter the value of n ")
B=input("enter the value of m ")
m=3000
h=(xn-x0)/m
sum1=P(A,x0)*P(B,x0)+P(A,xn)*P(B,xn);
sum2=0
x(1)=x0
x(n+1)=xn
for i=1:m-1
   x(i+1)=x(i)+h

   if(modulo(i,2)==0)then
      sum2=sum2+2*P(A,x(i+1))*P(B,x(i+1))
   else
      sum2=sum2+4*P(A,x(i+1))*P(B,x(i+1))
   end
end
disp((sum2+sum1)*(h/3))
```