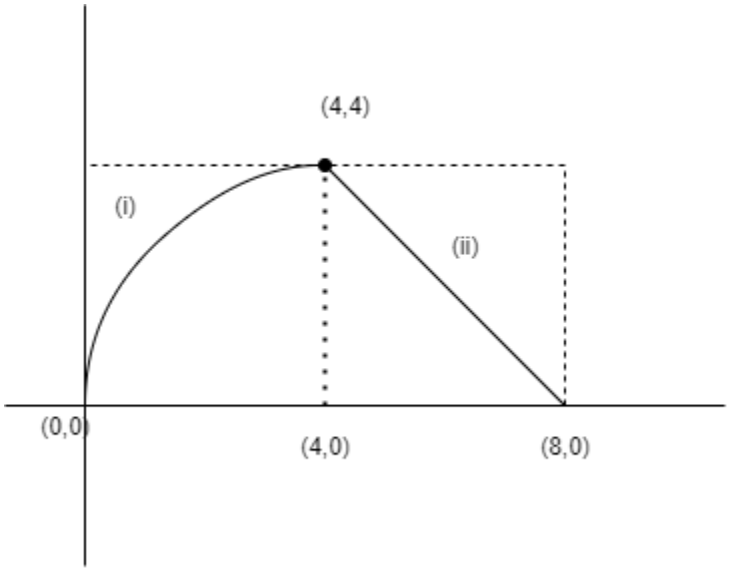
Assignment on Monte Carlo Integration

Deadline: 22 March (Monday,11:55 PM)

1. Find the Integral of $x^2 e^{-x} \ln(x+2)$ limit x=0 to x=1 using monte carlo integral. Use 100, 1000, 5000, 10000 data points and print the integral value and error estimate. Also draw error vs n graph (bar plot). Here n= number of points.

2. Find the area under the curve below using the Monte Carlo **Integral**.



Equation of curve - (i) is : $y^2 = 4x$
Equation of (ii) is: $y = 8 - x$
Simulate this area for n=100,1000,5000,10000 points. For each value of n, print the area and estimated error of integral.