

Assignment6

CS20Btech11035 -NYALAPOGULA MANASWINI

Download python code from

<https://github.com/N-Manaswini23/assignment6/blob/main/python%20codes/assignment6.py>

actual probability:0.25

simulated probability: 0.2499731

Download latex code from

<https://github.com/N-Manaswini23/assignment6/blob/main/assignment6.tex>

GATE 2019 ME SET-2 QUESTION 28

The variable x takes a value between 0 and 10 with uniform probability distribution. The variable y takes a value between 0 and 20 with uniform probability distribution. The probability that sum of variables $(x + y)$ being greater than 20 is

SOLUTION

Given variable x takes a value between 0 and 10.
Variable y takes a value between 0 and 20.

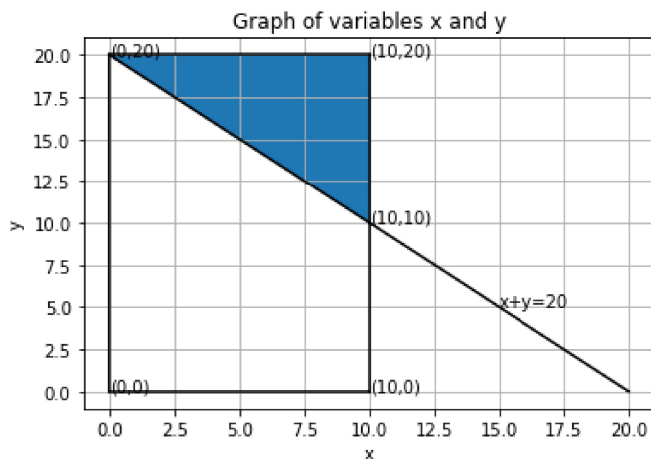


Fig. 0: Graph

From graph (0)

$$\Pr(x + y > 20) = \frac{\text{Area of shaded region}}{\text{Area of rectangle}} \quad (0.0.1)$$

$$= \frac{\frac{1}{2} \times 10 \times 10}{10 \times 20} \quad (0.0.2)$$

$$\therefore \Pr(x + y > 20) = \frac{1}{4} = 0.25 \quad (0.0.3)$$