Assignment6

CS20Btech11035 -NYALAPOGULA MANASWINI

Download python code from

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

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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.

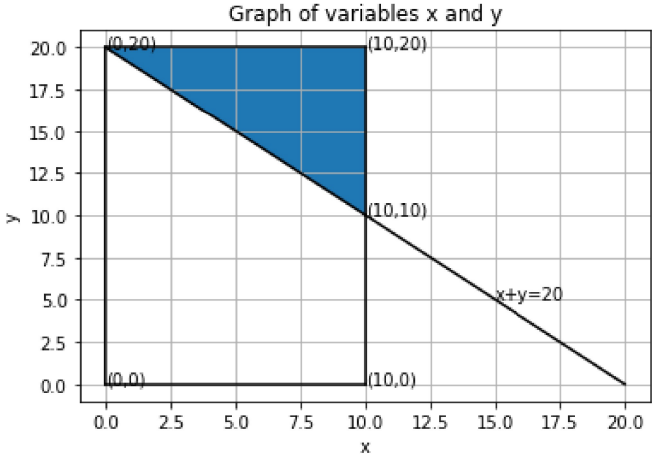

Fig. 0: Graph

From graph (0)

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

$$= \frac{\frac{1}{2}\times 10\times 10}{10\times 20} \tag{0.0.2}$$

$$= \frac{1}{4} \tag{0.0.3}$$

$$\therefore \Pr(x+y>20) = \frac{1}{4} = 0.25 \tag{0.0.4}$$