Assignment 6

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Download all python codes from

and latex-tikz codes from

1 PROBLEM(GATE 2020(ST) Q19)

Let E,F and G be mutually independent events with $P(E) = \frac{1}{2}$, $P(F) = \frac{1}{3}$ and $P(G) = \frac{1}{4}$. Let p be the probability that at least two of the events among E,F and G occur. Then $12 \times p =$

2 SOLUTION(GATE 2020(ST) Q19)

$$p = P(EFG) + \sum P(EFG') \qquad (2.0.1)$$

since the events are mutually independent

$$P(EFG) = P(E)P(F)P(G) \qquad (2.0.2)$$

$$\implies p = P(E)P(F)P(G) + P(E')P(F)P(G)$$
$$+ P(E)P(F')P(G) + P(E)P(F)P(G') \quad (2.0.3)$$

$$\implies 12 \times p = \frac{7}{2} \qquad (2.0.4)$$