

Answer the following Questions

(I just want to check the basic understanding of probability with first few basic questions)

1. If A and B are two independent events such that $P(A) > 0$, and $P(B) \neq 1$, then $P(\bar{A} / \bar{B})$ is equal to :

(a) $1 - P(A/B)$ (b) $P(A / \bar{B})$ (c) $\frac{1 - P(A \cup B)}{P(B)}$ (d) $\frac{P(\bar{A})}{P(\bar{B})}$

2. Which of the following tells exactly one of A or B event.

(a) $P(A) + P(B) - P(A)P(B)$ (b) $P(A \cup B) - P(A)P(B)$
 (c) $P(\bar{A} \cap B) + P(A \cap \bar{B})$ (d) $P(A \cup B) - P(A \cap B)$

3. If $P(A \cap B) = P(A)$; $P(A \cap C) = P(C)$ then the value of $P(A \cup B \cup C) =$ _____.

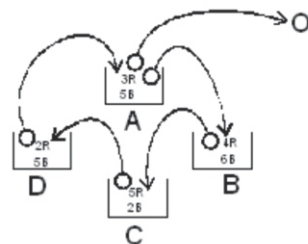
4. Student 'A' will pass in exam with probability 'a'; student 'B' will pass with probability 'b'; student 'C' will pass with probability 'c'; probability that at least one of a, b, c will pass = 0.9; at least 2 will pass = 0.6 and probability exactly '2' will pass = 0.4.

Find the value of $\left(\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ac}\right)^2 =$ _____.

5. A boy fails in 5 exams out of 8 exams. Find the probability he will in 50 exams out of 80 exams. _____.

6. If a dice is biased such that probability of getting 2, 3, 4 is double the probability of getting 1, 5 & 6. Find the probability of getting exactly 3 times 5 and 7 times 3 out of 10 rolls of dice. _____

7. If a ball is taken from Bag (A) placed in Bag (B) then from Bag (B) to Bag (C) one ball is replaced then one ball from Bag (C) to Bag (D) then one ball from Bag (D) to Bag (A), then a ball is drawn from Bag (A), then find the probability that the ball drawn from Bag (A) at last is Blue = _____



- (b) Probability that ball drawn from Bag (C) is Red if ball drawn from Bag is Red. _____.

8. An anti-aircraft gun take a maximum of 4 shots at an enemy plane moving away from it. The probabilities of hitting the plane at the first, second, third and fourth shot are 0.4, 0.3, 0.2 and 0.1 respectively. what is the probability that the gun hits the plane ? _____

9. If $P(A \cup B) = P(A) + P(B) - P(A)P(B)$; then find the value of

$\left[1 - \frac{P(A/B)}{P(B/A)} \cdot P(A \cap B)\right] / (1 + P(A)) =$ _____ (write your answer in single term)

10. Probability that there is at least 1 girl sitting b/w two boys while arranging 5 boys and 25 girls in a row. _____.