



MATHS

BOOKS - BITSAT GUIDE

PROBABILITY

Practice Exercise

1. A single letter is selected at random from the word "PROBABILITY" . The probability that it is a vowel is

A. $\frac{3}{11}$

B. $\frac{4}{11}$

C. $\frac{2}{11}$

D. 0

Answer: B



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2. A five-digit number is formed by the digit 1, 2, 3, 4, 5 without repetition.

Find the probability that the number formed is divisible by 4.

A. $\frac{1}{5}$

B. $\frac{6}{5}$

C. $\frac{4}{5}$

D. None

Answer: A



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3. Three identical dice are rolled. The probability that same number appears on them, is

A. $\frac{1}{6}$

B. $\frac{1}{36}$

C. $\frac{1}{18}$

D. $\frac{3}{28}$

Answer: B



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4. A determinant is chosen at random from the set of all determinants of order two with elements 0 or 1 only. Probability that the determinant chosen has positive value is

A. $1/8$

B. $3/16$

C. $1/4$

D. None of these

Answer: B

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5. From a well shuffled pack of 52 playing cards, four cards are accidentally dropped. Find the probability that one card is missing from each suit.

A. $\frac{1}{256}$

B. $\frac{2}{20825}$

C. $\frac{2197}{20825}$

D. None of these

Answer: C

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6. If three distinct numbers are chosen randomly from the first 100 natural numbers, then the probability that all three of them are divisible by both 2 and 3 is $\frac{4}{25}$ b. $\frac{4}{35}$ c. $\frac{4}{33}$ d. $\frac{4}{1155}$

A. $\frac{4}{55}$

B. $\frac{4}{35}$

C. $\frac{4}{33}$

D. $\frac{4}{1155}$

Answer: D



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7. A four digit numbers is formed with the digits from 1, 2, 3, 4, 5 without repetition. The probability that it is divisible by 3, is

A. $\frac{1}{3}$

B. $\frac{1}{4}$

C. $\frac{1}{5}$

D. $\frac{1}{6}$

Answer: C

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8. A and B stand in a ring along with 10 other persons. If the arrangement is at random, then the probability that there are exactly 3 persons between A and B, is

A. $\frac{1}{11}$

B. $\frac{7}{324}$

C. $\frac{5}{162}$

D. $\frac{5}{81}$

Answer: B

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9. One function is selected from all the functions $F: S \rightarrow S$, where $S = \{1, 2, 3, 4, 5, 6\}$. the probability that it is onto function, is

A. $\frac{5}{324}$

B. $\frac{7}{324}$

C. $\frac{5}{162}$

D. $\frac{5}{81}$

Answer: A



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10. There are 2 teams with n persons in each. The probability of selecting 2 persons from one team and 1 person from the other team is $\frac{6}{7}$, then n is equal to

A. 3

B. 4

C. 5

D. 6

Answer: B



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11. $x_1, x_2, x_3, \dots, x_{50}$ are fifty real numbers such that $x_r < x_{r+1}$ for $r = 1, 2, 3, \dots, 49$. Five numbers out of these are picked up at random. The probability that the five numbers have x_{20} as the middle number is :

A. $\frac{{}^{20}C_2 \times {}^{30}C_2}{{}^{50}C_5}$

B. $\frac{{}^{30}C_2 \times {}^{19}C_2}{{}^{50}C_5}$

C. $\frac{{}^{19}C_2 \times {}^{31}C_2}{{}^{50}C_5}$

D. None of these

Answer: B



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12. Two numbers are selected randomly from the set $S = \{1, 2, 3, 4, 5, 6\}$ without replacement one by one. The probability that minimum of the two numbers is less than 4 is $\frac{1}{15}$ b. $\frac{14}{15}$ c. $\frac{1}{5}$ d. $\frac{4}{5}$

A. $\frac{1}{15}$

B. $\frac{14}{15}$

C. $\frac{1}{5}$

D. $\frac{4}{5}$

Answer: D



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13. If the events A and B are mutually exclusive events such that $P(A) = \frac{3x + 1}{3}$ and $P(B) = \frac{1 - x}{4}$, then the set of possible real values of x lies in the interval

A. $[0, 1]$

B. $\left[\frac{1}{3}, \frac{2}{3}\right]$

C. $\left[-\frac{1}{3}, \frac{5}{9}\right]$

D. $\left[-\frac{7}{9}, \frac{4}{9}\right]$

Answer: C



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14. An urn contains nine balls of which three are red, four are blue and two are green. Three balls are drawn at random without replacement from the urn. The probability that the three balls have different colour, is

A. $\frac{1}{3}$

B. $\frac{2}{7}$

C. $\frac{1}{21}$

D. $\frac{2}{23}$

Answer: B

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15. Three houses are available in a locality. Three persons apply for the houses. Each applies for one house without consulting others. The probability that all the three apply for the same house is

A. $\frac{7}{9}$

B. $\frac{8}{9}$

C. $\frac{1}{9}$

D. $\frac{2}{9}$

Answer: C

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16. If a number of two digits is formed with the digits 2, 3, 5, 7, 9 without repetition of digits, then the probability that the number formed 35, is

A. $\frac{1}{10}$

B. $\frac{1}{20}$

C. $\frac{1}{30}$

D. None

Answer: B



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17. If the papers of 4 students can be checked by anyone of the 7 teachers, then the probability that all the 4 papers are checked by exactly 2 teachers, is equal to

A. $\frac{12}{49}$

B. $\frac{6}{49}$

C. $\frac{9}{49}$

D. $\frac{15}{49}$

Answer: B



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18. If the word 'UNIVERSITY' is arranged randomly, then the probability that both 'i' are not together, is

A. $\frac{3}{5}$

B. $\frac{2}{5}$

C. $\frac{4}{5}$

D. $\frac{3}{5}$

Answer: C



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19. If 6 objects are distributed at random among 6 persons, then the probability that atleast one person does not get any object, is

A. $\frac{313}{324}$

B. $\frac{315}{322}$

C. $\frac{317}{324}$

D. $\frac{319}{324}$

Answer: D



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20. The probability of not getting a sum of 7 in a single throw with a pair of dice, is

A. $\frac{1}{6}$

B. $\frac{2}{3}$

C. $\frac{1}{3}$

D. $\frac{5}{6}$

Answer: D

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21. The events E_1 and E_2 have probabilities 0.25 and 0.50 respectively. If the probability that both E_1 and E_2 occur simultaneously is 0.14. Then the probability that neither E_1 nor E_2 occurs is

- A. 0.39
- B. 0.25
- C. 0.11
- D. None of these

Answer: A

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22. Four persons are selected at random from a group of 3 men, 2 women and 4 children. What is the chance that exactly two of them are children?

A. $\frac{9}{21}$

B. $\frac{10}{23}$

C. $\frac{11}{24}$

D. $\frac{10}{21}$

Answer: D



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23. A coin is tossed 3 times by 2 persons. The probability that both get equal number of heads, is

A. $\frac{3}{8}$

B. $\frac{1}{9}$

C. $\frac{5}{16}$

D. None

Answer: C

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24. A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the number of the ball drawn will be a multiple of 3 or 7.

A. $\frac{14}{30}$

B. $\frac{40}{900}$

C. $\frac{13}{30}$

D. None

Answer: C

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25. The probability that a leap year selected at random contains either 53 sundays or 53 mondays, is

A. $\frac{2}{7}$

B. $\frac{4}{7}$

C. $\frac{3}{7}$

D. $\frac{1}{7}$

Answer: C



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26. For the three events

A , B , and C , $P(\text{exactly one of the events } A \text{ or } B \text{ occurs}) = P(\text{exactly one of the events } B \text{ or } C \text{ occurs}) = p$

and

$P(\text{all the three events occur simultaneously}) = p^2$, where $p > 0$.

Then, find the probability of occurrence of at least one of the three events A , B , and C .

A. $\frac{3p + 2p^2}{2}$

B. $\frac{p + 3p^2}{4}$

C. $\frac{\rho + 3\rho^3}{2}$

D. $\frac{3\rho + 2\rho^2}{4}$

Answer: A



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27. A, B, C are events such that

$$P_r(A) = 0.3, P_r(B) = 0.4, P_r(C) = 0.8$$

$$P_r(AB) = 0.08, P_r(AC) = 0.28 \text{ and } P_r(ABC) = 0.09. \text{ If } P_r(A \cup B \cup C)$$

then $P_r(BC)$ lies in the interval

A. $0.23 \leq x \leq 0.48$

B. $0.25 \leq x \leq 0.30$

C. $0.49 \leq x \leq 0.74$

D. None of these

Answer: A



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28. If A and B are two events, then the probability that exactly one of them occurs, is given by

A. $P(A) + P(B) - 2P(A \cap B)$

B. $P(A \cap B) - P(A' \cap B)$

C. $P(A \cup B) + P(A \cap B)$

D. $P(A') + P(B') + 2P(A' \cap B)$

Answer: A

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29. The probability that in the toss of two dice we obtain an even sum or a sum less than 5 is

A. $\frac{1}{2}$

B. $\frac{1}{6}$

C. $\frac{2}{3}$

D. $\frac{5}{9}$

Answer: D



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30. A number is chosen at random among the first 120 natural numbers.

The probability of the number chosen being a multiple of 5 or 15 is

A. $\frac{1}{8}$

B. $\frac{1}{5}$

C. $\frac{1}{24}$

D. $\frac{1}{6}$

Answer: B



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31. For any two events A and B, if $P(A \cup B) = P(A \cap B)$, then

A. $P(A) = P(B)$

B. $P(A) > P(B)$

C. $P(A) < P(B)$

D. None of these

Answer: A



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32. For any two independent events

E_1 and E_2 , $P\{(E_1 \cup E_2) \cap (\bar{E}_1 \cap \bar{E}_2)\}$ is

A. $< \frac{1}{4}$

B. $> \frac{1}{4}$

C. $\geq \frac{1}{2}$

D. None

Answer: A



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33. Five horses are in race. Mr. X selected two of horses at random and bets on them. The probability that Mr. X selected the winning horse is

A. $\frac{4}{5}$

B. $\frac{3}{5}$

C. $\frac{1}{5}$

D. $\frac{2}{5}$

Answer: D



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34. . A bag contains 3 red and 3 white balls. Two balls are drawn one-by-one. The probability that they are of different colours, is

A. $\frac{3}{10}$

B. $\frac{2}{5}$

C. $\frac{3}{5}$

D. None

Answer: C



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35. Let X be a set containing n elements. Two subsets A and B of X are chosen at random, the probability that $A \cup B = X$ is

A. ${}^{2n}C_n / 2^{2n}$

B. $1/2^n C_n$

C. $1.3.5 \dots (2n - 1) 2^n \cdot n!$

D. $(3/4)^n$

Answer: D



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36. In a hurdle race, a runner has probability p of jumping over a specific hurdle. Given that in 5 trials, the runner succeeded 3 times, the conditional probability that the runner had succeeded in the first trial is

A. $\frac{3}{5}$

B. $\frac{2}{5}$

C. $\frac{1}{5}$

D. None

Answer: A



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37. A committee of 4 students is selected at random from a group consisting of 8 boys and 4 girls. Given that there is at least one girl in the committee, calculate the probability that there are exactly 2 girls in the committee.

A. $\frac{7}{99}$

B. $\frac{13}{99}$

C. $\frac{14}{99}$

D. None

Answer: D



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38. If one Indian and four American men and their wives are to be seated randomly around a circular table. Then, the conditional probability that the Indian man is seated adjacent to his wife given that each American man is seated adjacent to his wife, is

A. $\frac{1}{2}$

B. $\frac{1}{3}$

C. $\frac{2}{5}$

D. $\frac{1}{5}$

Answer: C



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39. It is given that the events A and B are such that

$$P(A) = \frac{1}{4}, P\left(\frac{A}{B}\right) = \frac{1}{2} \text{ and } P\left(\frac{B}{A}\right) = \frac{2}{3}. \text{ Then } P(B) \text{ is}$$

A. $\frac{1}{2}$

B. $\frac{1}{6}$

C. $\frac{1}{3}$

D. $\frac{2}{3}$

Answer: C



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40. If $P(A) = \frac{2}{5}$, $P(B) = \frac{3}{10}$ and $P(A \cap B) = \frac{1}{5}$, then $P\left(\frac{A'}{B'}\right) \cdot P\left(\frac{B'}{A'}\right)$ is equal to

A. $\frac{5}{9}$

B. $\frac{5}{7}$

C. $\frac{25}{42}$

D. 1

Answer:



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41. If A and B are two events such that $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$, $P\left(\frac{A}{B}\right) = \frac{1}{4}$, then $P(A' \cap B')$ is equal to

A. $\frac{1}{12}$

B. $\frac{3}{4}$

C. $\frac{1}{4}$

D. $\frac{3}{16}$

Answer: C

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42. If $P(A) = \frac{3}{10}$, $P(B) = \frac{2}{5}$ and $P(A \cup B) = \frac{3}{5}$, then $P\left(\frac{B}{A}\right) + P\left(\frac{A}{B}\right)$ is equal to

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{5}{12}$

D. $\frac{7}{12}$

Answer: D

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43. If two events A and B are such that $0 < P(A), P(B) < 1$ then

$P\left(\frac{A}{B}\right) + P\left(\frac{\bar{A}}{\bar{B}}\right)$ is equal to

A. 1

B. $\frac{3}{2}$

C. $\frac{1}{2}$

D. None of these

Answer: A



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44. A purse contains 4 copper coins, 3 silver coins, the second purse contains 6 copper coins and 2 silver coins. A coin is taken out of any purse, the probability that it is a copper coin is

A. $\frac{4}{7}$

B. $\frac{37}{56}$

C. $\frac{3}{7}$

D. $\frac{3}{4}$

Answer: B



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45. Bag A contains 2 white and 3 red balls and bag B contains 4 white and 5 red balls. One ball is drawn at random from one of the bags and is found to be red. The probability that it was drawn from the bag B is

A. $\frac{5}{9}$

B. $\frac{4}{9}$

C. $\frac{25}{52}$

D. None of these

Answer: C

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46. The chance of defective screws in three boxes A, B, C are $1/5, 1/6, 1/7$, respectively. A box is selected at random and a screw drawn from it at random is found to be defective. Then find the probability that it came from box A .

A. $\frac{16}{29}$

B. $\frac{1}{15}$

C. $\frac{27}{59}$

D. $\frac{42}{107}$

Answer: D

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47. In three throws of two dice, the probability of throwing doublets not more than twice is

A. $1/6$

B. $5/72$

C. $215/216$

D. None

Answer: C



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48. A and B are two independent events. The probability that both A and B occur is $1/6$ and the probability that neither of them occurs is $1/3$.

Find the probability of the occurrence of A .

A. $\frac{1}{2}, \frac{1}{3}$

B. $\frac{1}{3}, \frac{1}{4}$

C. $\frac{1}{2}, \frac{1}{4}$

D. None

Answer: A



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49. The probability that a 50 year old man will be alive at 60 is 0.83 and the probability that a 45 year old woman will be alive at 55 is 0.87. The probability that atleast one of the will be alive ten years hence, is

A. 0.221

B. 0.779

C. 0.669

D. 0.758

Answer: B



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50. The probability that any of the men A_1, A_2, A_3, A_4 is alive after 95 years of age is $\frac{1}{2}$. The probability that A_1 will die at the age of 95 and will be the first to die is

A. $\frac{15}{16}$

B. $\frac{15}{64}$

C. $\frac{1}{4}$

D. $\frac{8}{15}$

Answer: B



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51. A man throws a fair coin number of times and gets 2 points for each head and 1 point for each tail the probability that he gets exactly 6 points is $\frac{21}{32}$ (2) $\frac{13}{64}$ (3) $\frac{43}{64}$ (4) $\frac{23}{32}$

A. $\frac{21}{32}$

B. $\frac{23}{32}$

C. $\frac{41}{64}$

D. $\frac{43}{64}$

Answer: D



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52. There are 5 bails numbered 1 to 5 and 5 boxes numbered 1 to 5. The balls are kept in the boxes one in each box. The probability that exactly 2 balls are kept in the corresponding numbered boxes and the remaining 3 bails in the wrong boxes, is

A. $\frac{1}{5}$

B. $\frac{1}{6}$

C. $\frac{1}{10}$

D. $\frac{1}{12}$

Answer: B



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53. A draws two cards at random from a pack of 52 cards. After returning them to the pack and shuffling it, B draws two cards at random. The probability that their draws contain exactly one common card is

A. $\frac{25}{546}$

B. $\frac{50}{663}$

C. $\frac{25}{663}$

D. $\frac{24}{563}$

Answer: B



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54. A, B, C try to hit a target simultaneously but independently. Their respective probabilities of hitting the target are $\frac{3}{4}, \frac{1}{2}, \frac{5}{8}$. The probability that target is hit by A or B but not by C is

A. $\frac{21}{64}$

B. $\frac{7}{8}$

C. $\frac{7}{32}$

D. $\frac{9}{64}$

Answer: A



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55. Let A and B be two events such that $P(\overline{A \cup B}) = \frac{1}{6}$, $P(A \cap B) = \frac{1}{4}$ and $P(\overline{A}) = \frac{1}{4}$ where \overline{A} stands for complement of event A. Then, events A and B are

A. mutually exclusive and independent

- B. independent but not equally likely
- C. equally likely but not independent
- D. equally likely and mutually exclusive

Answer: B



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56. A bag contains 17 tickets numbered 1 to 17. A ticket is drawn and replaced, then one more ticket is drawn and replaced. Probability that first number drawn is even and second is odd, is

- A. $\frac{82}{289}$
- B. $\frac{72}{289}$
- C. $\frac{64}{289}$
- D. $\frac{63}{280}$

Answer: B

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57. Three letters are to be sent to different persons and addresses on the three envelopes are also written. Without looking at the addresses, the probability that the letters go into the right envelope is equal to

A. $\frac{1}{27}$

B. $\frac{1}{9}$

C. $\frac{4}{27}$

D. $\frac{1}{6}$

Answer: D

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58. A fair coin is tossed repeatedly. If tail appears on first four tosses, then the probability of head appearing on fifth toss is equal to

A. $\frac{1}{2}$

B. $\frac{1}{32}$

C. $\frac{31}{32}$

D. $\frac{1}{5}$

Answer: A



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59. A die is thrown and a card is selected at random from a deck of 52 playing cards. The probability of getting an even number on the die and a spade card is

A. $\frac{1}{2}$

B. $\frac{1}{4}$

C. $\frac{1}{8}$

D. $\frac{3}{4}$

Answer: C



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60. If A and B are two independent events such that $P(A) = \frac{7}{10}$, $P(\overline{B}) = \alpha$ and $P(A \cup B) = \frac{4}{5}$, then the value of α is

A. 1

B. $\frac{5}{7}$

C. $\frac{2}{7}$

D. $\frac{1}{4}$

Answer: C



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61. In a throw of a dice the probability of getting one in even number of throw is

A. $\frac{5}{36}$

B. $\frac{5}{11}$

C. $\frac{6}{11}$

D. $\frac{1}{6}$

Answer: B



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62. . Two aeroplanes I and II, bomb a target in succession. The probabilities of I and II scoring a hit correctly are 0.3 and 0.2, respectively. The second plane will bomb only, if the first misses the target. The probability that the target is hit by the second plane, is

A. 0.06

B. 0.14

C. 0.32

D. 0.7

Answer: C



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63. A discrete random variable X has the following probability distribution

X	1	2	3	4	5	6	7
$P(X)$	C	$2C$	$2C$	$3C$	C^2	$2C^2$	$7C^2 + C$

The value of C and the mean of the distribution are

- A. $\frac{1}{10}$ and 3.66
- B. $1/20$ and 2.66
- C. $1/15$ and 1.33
- D. None of these

Answer: A



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64. A random variable X has the probability distribution

For the events $E = \{X \text{ is a prime number}\}$ and $F = \{X < 4\}$, $P(E \cup F)$ is

X	1	2	3	4	5	6	7	8
$P(X)$	0.15	0.23	0.12	0.10	0.20	0.08	0.07	0.05

A. 0.87

B. 0.77

C. 0.35

D. 0.50

Answer: B



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65. If 10% of bolts produced by a machine are defective, then the probability that out of a sample selected at random, of 7 bolts, not more than 1 is defective, is

A. $(16)^6(0.9)^4$

B. $(0.9)^6(1.6)$

C. $(1.6)^4(0.9)^4$

D. None

Answer: B



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66. If the mean and variance of a binomial variate X are α and 1 respectively, then the probability that X takes a value greater than one equal to

A. $13/16$

B. $12/16$

C. $9/16$

D. $11/16$

Answer: D



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67. An unbiased coin is tossed n times. Let X denote the number of times head occurs. If $P(X = 4)$, $P(X = 5)$ and $P(X = 6)$ are in A.P, then the value of n can be

A. 13

B. 7

C. 11

D. 12

Answer: B



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68. The mean and variance of binomial distribution are 4 and 3, respectively. Then, the probability of getting exactly six success in this distribution is

A. ${}^{16}C_6 \left(\frac{1}{4}\right)^{10} \left(\frac{3}{4}\right)^6$

B. ${}^{16}C_6 \left(\frac{1}{4}\right)^6 \left(\frac{3}{4}\right)^{10}$

C. ${}^{12}C_6 \left(\frac{1}{4}\right)^{10} \left(\frac{3}{4}\right)^6$

D. None of these

Answer: B



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69. A multiple choice examination has 5 questions. Each questions has three alternative answers of which exactly one is correct. The probability that a student will get 4 or more correct answers just be guessing, is

A. $\frac{17}{3^5}$

B. $\frac{13}{3^5}$

C. $\frac{11}{3^5}$

D. $\frac{10}{3^5}$

Answer: C



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70. A die is rolled 20 times . Getting a number greater than 4 is a success.

Find the mean and variance of the number of successes .

A. 6.6, 4.4

B. 6.5, 4.5

C. 6.3, 4.3

D. 6.2, 4.2

Answer: A



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71. A fair coin is tossed a fixed number of times. If the probability of getting seven heads is equal to that of getting nine heads, the probability of getting two heads, is

A. $\frac{15}{2^8}$

B. $\frac{2}{15}$

C. $\frac{15}{2^{13}}$

D. $\frac{4}{9}$

Answer: C



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72. A die is thrown 100 times, getting an even number is considered a success. The variance of the number of successes is

A. 10

B. 25

C. 18

D. 10

Answer: B



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73. A die is thrown 100 times, getting an even number is considered a success. The variance of the number of successes is

A. $\frac{1}{4}$

B. $\frac{5}{8}$

C. $\frac{1}{2}$

D. $\frac{1}{6}$

Answer: C



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1. 5 persons A, B, C, D and E are in a queue of a shop. The probability that A and E always occur together, is

A. $\frac{1}{4}$

B. $\frac{2}{3}$

C. $\frac{2}{5}$

D. $\frac{3}{5}$

Answer: C



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2. The probability of simultaneous occurrence of at least one of two events A and B is p . If the probability that exactly one of A, B occurs is q then prove that $P(A) + P(B) = 2 - 2p + q$.

A. $2 - 2p + q$

B. $2 + 2p - q$

C. $3 - 3p + q$

D. $2 - 4p + q$

Answer: A



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3. If A and B are two events such that

$P(A) = 0.6$, $P(B) = 0.2$ and $P\left(\frac{A}{B}\right) = 0.5$, then $P\left(\frac{A'}{B'}\right)$ equal to

A. $\frac{1}{10}$

B. $\frac{3}{10}$

C. $\frac{3}{8}$

D. $\frac{6}{7}$

Answer: C



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4. A bag contains 3 white and 5 black balls. One ball is drawn at random.

Then, the probability that it is white, is

A. $\frac{1}{8}$

B. $\frac{3}{8}$

C. $\frac{5}{8}$

D. $\frac{3}{5}$

Answer: B



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5. For any two events A and B if

$P(A \cup B) = 5/6$, $P(A \cap B) = 1/3$, $P(B) = 1/2$ then P(A) is

A. $1/2$

B. $\frac{2}{3}$

C. $\frac{1}{3}$

D. None of these

Answer: A



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6. If $\frac{1+3p}{3}$, $\frac{1}{4}$ and $\frac{1-2p}{2}$ are probabilities of mutually exclusive events of a random experiment then the range of p is

A. $\frac{1}{3} \leq p \leq \frac{1}{2}$

B. $\frac{1}{4} \leq p \leq \frac{1}{2}$

C. $\frac{1}{3} \leq p \leq \frac{2}{3}$

D. $\frac{1}{3} \leq p \leq \frac{2}{5}$

Answer: B



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7. If A and B are two events such that $P(A) = 3/4$ and $P(B) = 5/8$, then

A. $P(A \cup B) \geq 3/4$

B. $P(A' \cap B) \leq 1/4$

C. $\frac{3}{8} \leq P(A \cap B) \leq \frac{5}{8}$

D. All of these

Answer: B



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8. A die is tossed twice. The probability of having a number greater than 4 on each toss is

A. $\frac{1}{3}$

B. $\frac{1}{9}$

C. $\frac{2}{3}$

D. $\frac{1}{12}$

Answer: B



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9. The probability that a leap year selected at random will contain either 53 Thursday or 53 Friday is

A. $\frac{3}{7}$

B. $\frac{2}{7}$

C. $\frac{5}{7}$

D. $\frac{1}{7}$

Answer: A



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10. The unbiased dice is tossed until a number greater than 4 appear.

What is the probability that an even number of tosses is needed?

A. $\frac{1}{2}$

B. $\frac{2}{5}$

C. $\frac{1}{5}$

D. $\frac{2}{3}$

Answer: B



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11. If mean and variance of a Binomial variate X are 2 and 1 respectively,

then the probability that X takes a value greater than 1 is:

A. $\frac{5}{16}$

B. $\frac{8}{16}$

C. $\frac{11}{16}$

D. $\frac{1}{16}$

Answer: C



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12. If A and B are independent events of a random experiment such that

$$P(A \cap B) = \frac{1}{6} \text{ and } P(\bar{A} \cap \bar{B}) = \frac{1}{3} \text{ then } P(A) =$$

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{5}{7}$

D. $\frac{1}{16}$

Answer: B



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13. For $k = 1, 2, 3$ the box B_k contains k red balls and $(k + 1)$ white balls. Let $P(B_1) = \frac{1}{2}$, $P(B_2) = \frac{1}{3}$ and $P(B_3) = \frac{1}{6}$. A box is selected at random and a ball is drawn from it. If a red ball is drawn, then the probability that it has come from box B_2 , is

A. $\frac{35}{78}$

B. $\frac{14}{39}$

C. $\frac{10}{13}$

D. $\frac{12}{13}$

Answer: B



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14. The probability that the same number appear on throwing three dice simultaneously is

A. $\frac{1}{36}$

B. $\frac{5}{36}$

C. $\frac{1}{6}$

D. $\frac{4}{13}$

Answer: A



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15. A coin is tossed n times. The probability of getting head at least once is greater than 0.8. Then the least value of n is

A. 2

B. 3

C. 5

D. 4

Answer: B



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16. Let A and B be two events and $P(A') = 0.3$, $P(B) = 0.4$, $P(A \cap B') = 0.5$, then $P(A \cup B')$ is

A. 0.5

B. 0.8

C. 1

D. 0.1

Answer: B



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