MATHS

BOOKS - CENGAGE

PROBABILITY AND STATISTICS

Question Bank

1. If two events A and B are such that $P(A^l) = 0.3$, $P(B) = 0.4$ and $P(A \cap B^l) = 0.5$, then $P\left(\frac{B}{A \cup B^l}\right)$ equals

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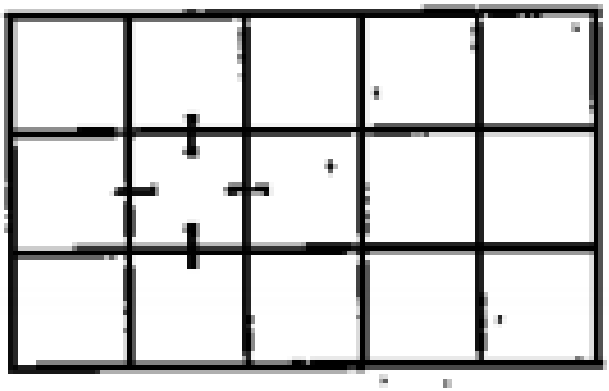
2. There are 4 horizontal and $.6$ vertical equispaced lines as shown. If a rectangle is randomly selected then probability that is a square is



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3. A number x is chosen at random from the first 100 natural numbers. Let A be the event of numbers which satisfies $\frac{(x-10)(x-50)}{x-30} \geq 0$,then P(A) is:

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

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5. A 2×2 matrix is formed with entries from the set $0, 1$. The probebility that it is singular, is

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6. Two boys A and B find the jumble of n ropes lying on the floor. Each takes hold of one loose end randomly. If the

probability that they are both holding the same rope is $\frac{1}{101}$ then the number of ropes is equal to

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7. On a normal standard dic one of the 21 dots from any one of the six faccs is removéd at random with each dot equally likely to be chosen. The die is then rolled. The probability that the top face has an odd number of dots is

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8. Miss C has either Tea or Coffee at moming break. If she has tea one morning, the probability she bas tea the next moming is 0.4. If she has coffee one morning, the probability she has coffee next moming is 0.3. Suppose she has coffee on

a Monday morning. The probability that she has tea on the following Wednesday morning is

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9. A bowl hes 6 red marbles and 3 green marbles. The probebility that a blind folded person will draw u red marble on the second draw from the bowl without replacing the marble from the first draw, is

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10. Lot A consists of $3G$ and $2D$ articles. Lot B consists of $4G$ and $1D$ article. A new lot C is formed by taking 3 articles from A and 2 from B. The probability that an article chosen at random from C is defective, is

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11. Let A and B are cvents of an experiment of $P(A) = \frac{1}{4}$, $P(A \cup B) = \frac{1}{2}$ then value of $P\left(BlA^{C}\right)$ is $\frac{1}{k}$ then value of k is

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12. The probability that a positive two digit number selected at random has its tens digit at least three more than its unit digit is

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13. If the papers of 4 students randomly distributed for checking among 7 teachers, then the probability that all the 4 papers are checked by exactly 2 teachers is nim where n, m are 'natural numbers and $HCF(n, m) = 1$. Then number of positive divisors of $(n + m)$ is

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14. A six faced fair dice is thrown until 2 comes, then the probability that 2 comes in even number of trials is (dice having six faces numbered $1, 2, 3, 4, 5$ and 6)

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15. If a variable takes the discrete values $p+4, p-\frac{7}{2}, p-\frac{5}{2}, p-3, p-2, p+\frac{1}{2}, p-\frac{1}{2}, p+5(p>0)$, and the median $p-K$ then find k

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16. The variance of 20 observations is 5 . If eech observation is multiplied by 2 then the new variance of the resulting observations, is:

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17. The mean weight of 9 items is 15 . If one more item is added to the series, the mean becomes 16 . The value of 10^{th} item is

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18. Consider the frequency distribution of the given pumber If mean of the distribution is cqual to 3 , then the value of f is

Value	1	2	3	4
Frequency	5	4	0	f

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19. $x_1, x_2 \ldots x_{34}$ are numbers such that $x_i = x_i + 1 - 150 \forall i \in 1, 2, 3, \ldots 9$ and $x_i + 1 - x_i + 2 = 0$ $\forall f \in 10, 11, 12, \ldots 33$, then median of $x_j x_2, \ldots x_{34}$ is

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20. The mean of 5 observations is 4 and their variancé is 52. If three of them are $1, 2, 6$ then the sum of other two

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21. If $x_1, x_2, \ldots x_{18}$ are observations sach the $\sum_{j=1}^{18}(x_j - 8) = 9$ and $\sum_{j=1}^{18}(x_j - 8)^2 = 45$, then the standard deviation. of these observations is:

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22. Two cards are drawn without replacement from a wellshuffled deck of 52 cards. Let X be the number of face cards drawn, then the sum of mean and variance of X will be.

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23. Let $x_1, x_2 \ldots x_n$ be n observations sach that $\sum x_i^2 = 200$ and $\sum x_i = 40$ then least integral value of n

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24. If in a frequency distribution, the mean and median are 25 and 26 , then its mode is approximately.

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