MATHS

BOOKS - UNITED BOOK HOUSE

PROBABILITY STATISTICS AND MATHEMATICAL REASONING

Exercise

1. If P and Q are chosen-randomly from the set

{ 1, 2, 3, 4, 5, 6. 7, 8,9,10}, with replacement,

determine the probability that the roots of the equation $x^2 + px + q = 0$are real.

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2. A com is tossed twice events E and Fare defined asfollows: E heads on 1st toss, F = heads on 2nd toss. Find the probability of $E \cup F$.

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3. A man takes a step forward with probability 0.4 and backward with probability 0.6. Find the probability that at the end of eleven steps he is one step away from the starting point.

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4. Out of (2n +1) tickets cosecutively numbered, three are drawn of random, find the probability that the three number on them are in A.P.

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5. Prove that the statement , “If all the angles of a triangle are equal, then the triangle is a right angled triangle” is false.

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6. Two numbers are selected at random from 1 , 2,3....,100 and are multiplied. Find the- probability that the product thus obtained is divisible by 3.

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7. The mean and variance of eight observations are 9 and 9.25, respectively. If six of the observations are $6, 7, 10, 12, 12 \text{ and } 13$, find the remaining two observations.

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8. 5 different -letters are kept into 5 envelopes with different address unmindfully. Find the:

probability that two letters have been kept into the envelopes of their proper address

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9. If the deviations from the arithmetic mean y of the variables y_1,y_2 and y_3 be x_1,$x_2$and x_3 respectively, then prove that $x_1^2 + x_2^2 + x_3^2 = y_1^2 + y_2^2 + y_3^2 - 3\bar{y}^2$

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10. Prove that the cpmpound statement “If x and y are odd integers, then xy is odd integer” is valid, using contrapositive method

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