



MATHS

BOOKS - UNITED BOOK HOUSE

Model Test Set -3

Exercise

1. The algebraic sum of deviation of a set of n values from their arithmetic means is a

A. n

B. 0

C. 1

D. None of these.

Answer:



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2. The arithmetic mean of the numbers 1, 2, 3, ..., n is

A. $\frac{n(n+1)(2n+1)}{6}$

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

C. $\frac{(n+1)}{2}$

D. None of these.

Answer:



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3. If $3u + 4v = 10$ and $S_u = 1.2$, then $\text{Var}(v) = 0.81$

A. 0.81

B. 0.8

C. 0.89

D. None of these.

Answer:



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4. If $b_2 = 3.16$, then the distribution is

A. Platykurtic

B. mesokurtic

C. leptokurtic

D. None of these.

Answer:



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5. The value of $\Delta (\Delta (8x + 9))$ is

A. 1

B. 0

C. $x+1$

D. None of these.

Answer:



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6. The least Fermat's number is

A. 0

B. 1

C. 2

D. 3

Answer:



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7. $a \equiv b \pmod{n}$ and $b \equiv c \pmod{n}$ implies $a \equiv c \pmod{n}$

A. 1

B.

C.

D.

Answer:



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8. An unbiased die thrown two independent times Given that the first throw resulted in an even number, the probability that the sum obtained is 8 is :

A. $\frac{3}{36}$

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

C. $\frac{4}{21}$

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

Answer:



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9. Events S and T are independent with $P(S) < P(T)$,

$P(S \cap T) = \frac{6}{25}$ and $P(S | T) + P(T | S) = 1$ then $P(S)$ is

A. $\frac{1}{25}$

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

C. $\frac{6}{25}$

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

Answer:



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10. The data on religions of persons of a city are _____.



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11. The A.M. of variable x is 100. Then what will be the value of the A.M, of the variable $(5x-10)$.



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12. If a variable is _____, then the mean and median must be equal.



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13. If the standard deviation of 1,2,3,4,5,6 and 7 is 2, then that of 101, 102, 103, 104, 105, 106 and 107 is _____.



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14. If the relation between two variables x and y is $2x + 3y = 7$ and median of y is 2. then what will be the value of median of x .



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15. If events A and B are complementary to each other, then $P(B) = ?$



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16. If $P(A) = \frac{1}{3}$, $P(B) = \frac{1}{2}$, $P(A|B) = \frac{1}{6}$. find $P(B|A)$.



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17. Write the sample space when one die is thrown twice.



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18. Let A, B, C be three arbitrary events. Find the expressions for the following events at least two events occur.



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19. Let A, B, C be three arbitrary events. Find the expressions for the following events not more than two events occur.

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20. Write down the Laspeyre's price index formula.

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21. Distinguish between attribute and variable.

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22. Show that the sum of deviations of a set of observations about their mean is Zero.

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23. What is a questionnaire in Statistics? State various characteristics of a good questionnaire.

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24. If $P(A + B) = \frac{7}{12}$ and $P(A) = \frac{1}{3}$ for two independent events A and B, find the value of P(B).

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25. If $P(A - B) = \frac{1}{3}$, $P(A) = \frac{1}{2}$ and $P(B) = \frac{1}{3}$, calculate the probability that out of the two events A and B, only B will occur.

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26. Can two mutually exclusive events with positive probabilities be independent? Give reasons.

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27. For three values a , $(a+b)/2$ and $b (> a)$ find the value of range/sd.

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28. What is coefficient of variation? State its uses.

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29. What are the principal characteristics of an ideal average?

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30. Suppose the least value (5) of a set of 50 values is changed to 4. What would happen to its mean and median.

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31. Find the condition that the equation

$x^3 - px^2 + qx - x = 0$ should have its roots in G.P.



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32. Find the remainder when

$x^5 + 5x^4 + x^3 + 5x^2 + 2x + 11$ is divided by $x + 5$



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33. Write a short note on interpolation.



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34. State Fermat's theorem. Also prove that

$$\Delta \log f(x) = \log \left[1 + \frac{\Delta f(x)}{f(x)} \right].$$



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35. Show that $P(B) > 0$, then

$$P(A_1 \cup A_2 | B) = P(A_1 | B) + P(A_2 | B) - P(A_1 \cap A_2 | B)$$

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36. Supposing $P(A \cap B) > 0$, show that

$$P(B \cap C | A) = P(B | A)P(C | A \cap B).$$



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37. Ten telegrams are distributed at random over 15 communication channels. Find the probability that the telegrams will be sent through ten different channels.

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38. Write down uses of index numbers.

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39. Write a short note on 'measures of dispersion'.

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40. Write a general formula expressing central moments in terms of raw moments.

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41. The first of two urns contains 3 white and 2 black balls and 2 red balls. One ball is taken at random from the first urn and is placed in the second urn. Then if one ball is taken at random from the second urn, find the probabilities that it is black.



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42. The first of two urns contains 3 white and 2 black balls and 2 red balls. One ball is taken at random from the first urn and is placed in the second urn. Then if one ball is taken at random from the second urn, find the probabilities that it is either red or white.



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43. A and B alternatively toss a fair coin. The first one to throw a head wins. If A starts find their respective probabilities of winning.



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