



MATHS

BOOKS - UNITED BOOK HOUSE

Model Test Set - 5

Exercise

1. Standard deviation of the 6 numbers 5, 5, 5, 7, 7, 7

is

A. 1

B. 2

C. 6

D. none of these.

Answer:



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2. Define Pearson's 2nd measure of skewness (SK_2).

Prove that $-3 \leq SK_2 \leq 3$.

A. 1

B.

C.

D.

Answer:



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3. The sum of the deviations of the values of a variable from its ____ is zero.

A. mean

B. median

C. mode

D. variance.

Answer:



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4. Define attribute with examples.

A. 1

B.

C.

D.

Answer:



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5. The degree of polynomial $3x^3 + 9x^8 + 2x^2 + 1$ is

A. 3

B. 7

C. 6

D. 8

Answer:



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6. If $\Delta x = 1$, then $\Delta x^2 = \underline{\hspace{2cm}}$.

A. $2x + 1$

B. $2x - 1$

C. $2x$

D. none of these.

Answer:



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7. If α, β, γ are the roots of $x^3 + px + q = 0$, then

$$\alpha\beta\gamma = _ _ _ _ _ .$$

A. q

B. $-q$

C. p

D. $-p$.

Answer:



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8. The least fermat's number is

A. 3

B. 5

C. 7

D. none of these.

Answer:



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9. If A is an-impossible event, $P(B|A)$ can be defined.

A. 1

B.

C.

D.

Answer:



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10. The probability of an event may exceed unity.

A. 1

B.

C.

D.

Answer:



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11. What do you mean by Ordinal data?



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12. If the relation between two variables y and x is $x - 3y = 6$ and S.D. of y is 2, then find the variance of 'x'.



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13. Define percentile.



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14. Logarithm of Geometric Mean is equal to _____
of Logarithms.



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15. State the condition when $A.M. = G.M. = H.M.$



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16. What is event in respect to probability theory .



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17. Give the condition when two events A and B will be mutually independent?



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18. The probability of an impossible event is _____

.



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19. If for two event A and B,

$$P(A \text{ or } B) = \frac{7}{10}, P(A \text{ and } B) = \frac{2}{5}, P(A|B) = \frac{2}{3}$$

, then $P(A) = ?$



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20. For two events A and B

$$P(A^C | B^C) + P(A | B^C) = ?$$



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21. Define simple aggregative price index number.



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22. name the different phases of human growth.



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23. If the mean square deviation of a variable x about 7 is 25 and the mean of x is 10, find var

$$\left(\frac{x - 10}{4} \right).$$



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24. What are different measures of skewness.



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25. A, B and C are three mutually exclusive and exhaustive events associated with a random experiment. Find $P(A)$ given that : $P(B) = \frac{3}{2}P(A)$ and $P(C) = \frac{1}{2}P(B)$.



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26. The probability that a student passes a physics test is $\frac{2}{3}$ and the that he passes both a physics and English test is $\frac{14}{25}$. The that he passes at least one test is $\frac{4}{5}$. What is the probability that he passes the English test.



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27. Show that if events A and B are independent, then so are A^c and B^c .



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28. What is the difference between A° and AU?



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29. Write a short note on histogram of a frequency distribution.



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30. 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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31. Suppose $2x - 3y = 5$ is the relation between the variables x and y . If the variance of x is 1.44 and y has mean 1, then calculate the standard deviation of y .



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32. Derive Lagrange's interpolation formula for $n = 3$.



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33. Prove that $\Delta^2 (ab^{ex}) = (b^c - 1)^2 ab^{ex}$.



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34. Given that x, y, z are unequal positive numbers

show that $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} \geq \frac{1}{\sqrt{xy}} + \frac{1}{\sqrt{yz}} + \frac{1}{\sqrt{zx}}$.



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35. Prove that $\log_5^7 < \sqrt{2}$.



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36. If A and B are two events such that $P(A) = \frac{3}{4}$ and $P(B^c) = \frac{3}{8}$. then prove that $\frac{3}{8} \leq P(A \cap B) \leq \frac{5}{8}$.



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37. An investment consultant predicts that the odds against the price of a certain stock will go up during the next week are 2 : 1 and the odds in favour of the price remaining the same are 1 : 3 what is the probability that the price of the stock will go down during the next week?



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38. 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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39. What do you mean by purchasing power of money?



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40. In a frequency table, the upper boundary of each class-interval has a constant ratio to the lower boundary. Show that the geometric mean (G) may

be expressed as
$$\log G = A + \frac{k}{n} \sum_{i=1}^r f_i(i - 1).$$



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41. State and Prove the theorem of compound probability. If events are independent, what will be the form of the theorem?



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42. Three groups of children contain respectively 3 girls and 1 boy, 2 girls and 2 boys and 1 girl and 3 boys one child is selected at random from each group find the chance that the selected group contain 1 girl and 2 boys.

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43. Write down uses of index numbers.

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