MATHS

BOOKS - KUMAR PRAKASHAN KENDRA MATHS (GUJRATI ENGLISH)

OBJECTIVE SECTION AS PER NEW PAPER SCHEME

Sets Fill In The Blanks

1. For given set A and B if $A \subset B$ and $A \neq B$ then set A is .....of set B.

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2. The numbers of proper subset of set A having n elements are..... .

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3. Numbers of elements in power set of the given set $A = \{x \in N \mid x^2 < 25\}$ are ..... .

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4. .....is the interval from of the set $\{x \in R \mid -5 < x \leq 7\}$.

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5. In ...way one can represent null set ϕ as property method.

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6. A ={x| x is the letter of the word FELLOW} B ={x| is the letter of the word FLOW} then both sets are connected with ..... operation .

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7. If A={x|x is the multiple of 4} and B = {x|x is the multiple of 6} then A $\cap B$ = {.....}

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8. If $A \subset B$ then $A \cap B =$ .....

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9. If $A \cup B = A$ then .....

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10. If n(A)=5, n(B)=8 and $A \subset B$ then $n(A \cup B)$=..... .

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11. If n(A) = 4, n (B) = 9 and $A \subset B$ then $n(A \cap B)$= ..... .

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12. If $Np = \{px \mid x \in N\}$ then $N_3 \cap N_5 =$ .... .

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13. For non null sets A and B, $A \cap (A \cap B)'$=.... .

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14. ϕ is null set and for given non null sets A and B,A $\cap (A \cup B) =$ .....

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15. For the non null sets A and B , $A \cup (A \cap B)'$ =.... .

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16. If $A \subset B$ then A - B = ...

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17. For non null sete A and B ,$A \cap$ (B-A) = ...

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18. For non null sets A and B if n(A) =16,n(B) = 14 , $n(A \cup B) = 25$ then $n(A \cap B) =$ .....

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19. For non null sets A and B if $n(A \cup B)$ = 36 ,n(A - B)= 15 and $n(A \cap B) = 16$ then n(B) = ...

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20. For set A = { 1,2,3 4} B = $\{x \in Z \mid -2 \leq x \leq 2\}$and C= {1,2,3 } are subset of ..... set .

Watch Video Solution

21. $U = [1, 5], A = \{x \mid x \in N, x^2 - 6x + 5 = 0\}$ then A'=....

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22. If R = set of real number and Q = set of rational number then R - Q = ...

Watch Video Solution

23. For set A if $n(A^4) = 81$ then n(A)=.....

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24. If n(A) =m and n (B)= n also total subsets of A are 16 times more than the subsets of B then m - n = ...

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25. Let U = set of all triangle and X = set of all triangles whose measure of all angle is less than 60° then X' = ...

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26. Set $A \cup B$ has m elements and set $A \cap B$ has n elements . Then set $A \Delta B$ has ..... elements .

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27. If n (A) = 10 ,n(B) = 6 and $A \cap B \neq \phi$ then maximum value of n (B-A) ..... .

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28. If A, B and C are three disjoint sets such that n(A) = 9, n(B) = 7, n(c) =4 then $n(A \cup B \cup C)$ = ...

Watch Video Solution

29. $A, B \in P(\cup)$ if $A \subset B$ then $A' \cup B =$ .... .

Watch Video Solution

30. For non null sets A and B $(A \cap B) \cup (A - B)$ = ...

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59. If $A \subset B$ then A - B = ...

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60. For non null sets A and B $(A \cap B) \cup (A - B)$ = ...

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Sets True False Statement

1. Numbers of proper subsets of the set having n elements are $2^{n+1} - 2, (n > 1 \in N)$

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2. $A - (B \cap C) = (A - B) \cap (A - C)$.

Watch Video Solution

3. The representation of the set $\{x \in N \mid x^2 + 9 = 0\}$ is ϕ .

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4. For sets A and B , n(A) = 20 , n(B) = 30 , n $(A \cup B) = 40, n(A \cap B) = 10$ and $n(U) = 100$ then $n(A' \cap B') = 60$.

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5. Numbers of improper subsets of the given set $A = \{1, 5, 9\}$ are 8 .

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6. Interval form of the set $\{x \in R \mid -1 \leq x < 7\}$ is given by (-1, 7] .

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7. $A \in P(A)$

Watch Video Solution

8. Every set has two subsets .

Watch Video Solution

9. $A = \{1, \{2, 3\}4\}$ then $\{2, 3\} \subset A$

Watch Video Solution

10. If $B \subset A$, $B \subset C$ and $x \in A$ then $x \in C$

Watch Video Solution

11. $\{\phi\} = \phi$

Watch Video Solution

12. $A = \left\{x \in N \mid x^3 = x\right\}$ is singleton set.

Watch Video Solution

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Relations And Functions Fill In The Blanks

1. If the order pairs (x+1, y-2) and (3,10) are equal then respective values of x and y are ..... .

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2. A and B are non null sets. Any one out of A and B is infinite then $A \times B$ is .....

Watch Video Solution

3. $A \times (B \cup C) = \ldots\ldots .$

Watch Video Solution

4. If $\left(\frac{x}{3}+1, y-\frac{2}{3}\right)=\left(\frac{5}{3}, \frac{1}{3}\right)$ then $x+y=\ldots\ldots .$

Watch Video Solution

5. Set A has three elements and B = {a, b, c,d} then numbers of elements in 'AxB' are .....

Watch Video Solution

6. Let A={1,2} and B={3,4}. Write $A \times B$. How many subsets will $A \times B$ have? List them.

Watch Video Solution

7. Let A={1,2} and B={3,4}. Find the number of relations from A to B.

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8. $f: R - \{0\} \to R, f(x) = \frac{1}{x} + px$ and $f\left(\frac{1}{5}\right) = \frac{28}{5}$ then p = ...

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9. Let f={(1,1),(2,3),(0,-1),(,-1,-3)} be a linear function from Z into Z. Find f(x).

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10. Function $f: N \to R, f(x) = \sqrt{x} =$ then value of $\frac{f(25)}{f(16) + f(1)}$ = ...

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11. If the graph of Y = (x) is symmetric about Y axis then .....

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12. Value of [2.3] is .....

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13. Value of [-2.3] is .....

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14. Graph of the function $f: R \to R$, $f(x) = 3x + 5$ is .... .

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15. $f: R \to R$, function f(x) is defined as $f(x) = 2x + |x|$ then $f(2x) + f(-x) - f(x)$ = ...

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16. $f: R - \{0\} \to R - \{0\}, f(x) = 4x^3 + 3x^2 + 3x + 4$ then $x^3 f\left(\frac{1}{x}\right) = ...$

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17. Function f defined on Z to Z as $f = \{(1, 1), (2, 3), (3, 5), (4, 7)\}$ and $f(x) = ax + b$ then a + b = ...

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18. Function f and g defined on $R - \{0\} \to R$ as $f(x) = x$ and $g(x) = \frac{1}{x}$ then $f.g(x) = ...$

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19. Function and g defined on $R \to R$ as $f(x) = x^2 + 7$ and $g(x) = 3x + 5$. Then f(3) + g(-5) = ...

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20. $R_1 = \{(x, y) \mid y = 2x + 7, y \in R \text{ and } x \in [-5, 5]\}$ Then range of R_1 ..... .

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21. f and g are real functions defined by f(x)= 2x + 1 and g(x) =4x -7. If f(x) = g(x) then x = ...

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22. f and g are real functions defined by f(x)= 2x + 1 and g(x) =4x -7. If $f(x) < g(x)$ then x ... 4 .

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23. f(x) is linear function of the type mx + c and f(-1) = -5 and f(3) = 3 then values of m and c are ....and ..... .

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24. Find the domain of the function $f(x) = \frac{x^2 + 2x + 1}{x^2 - 8x + 12}$

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25. The temperature in Celsius in the particular day in city is given by $t(c) = \frac{9c}{5} + 32$. if c = - 10 then value of t(c) = ...

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26. If $f(x) = \frac{1-x}{1+x}$ then $f(x) + f\left(\frac{1}{x}\right) = \ldots\ldots$ where $(x) \in R - \{0, 1\}$.

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27. If $f(x) = \frac{ax+b}{a+bx}$ then $f(x).\ f(x).\ f\left(\frac{1}{x}\right) = \ldots\ldots$

(where $x \neq 0$)

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28. If $f(x) = \frac{1-x}{1+x}$ then $x = \ldots\ldots$

Watch Video Solution

29. If $f(x) = \sin x$ then $2f(x).\ f(90 - x) = \ldots\ldots$

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30. The function 't' which maps temperature in degree Celsius into temperature in degree Fahrenheit is defined by t(c) $=\frac{9(c)}{5}+32$. If t(c)=212 then c = ...

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Relations And Functions True False Statement

1. Set A has three elements and B = {a, b, c,d} then numbers of elements in 'AxB' are .....

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2. If n(A) = p and n (B) = q then numbers of non void relations from A to B are $\left(2^{p+q}-1\right)$.

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3. Examine each of the following relations given below and state in each case, giving resons whether it is function or not?

(i) R={(2,1), (3,1), (4,2)}, (ii) R={(2,2), (2,4) ,(3,3),(4,4)}

(ii) R={(1,2),(2,3),(3,4),(4,5),(5,6),(6,7)}

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4.

$A = \{3k \mid k \in N\} B = \{3k - 1 \mid k \in N\}$ and $C = \{3k - 2 \mid k \in N\}$.

Then A , B and C are disjoint sets .

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5. $n(A \Delta B) = n(A) + n(B) - 2n(A \cap B)$

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6. If $[n(A)]^3 = 8$ and $\{0, 1, 0\} \in A^3$ then a = {0,1}

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7. A = Set of odd natural numbers

B = set of even natural numbers

$F = \{(a, b) \mid a.\, b$ is even natural number, $a \in A, b \in B\}$ Then domain of relation R is set . A

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8. $f: R \to R$, $f(x) = \sec^2 x - \tan^2 x$ is constant function .

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9. Graph of constant function is line parallel to Y - axis (means graph is vertical line)

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10. For $x \neq 0$, $f(x) = \dfrac{x - |x|}{|x|}$ then $f(-1) = 0$

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11. $f: R^+ \to R^+, f(x) = x^2 + 4(\sqrt{x}) + 3$ then f(4) = 24.

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12. Graph of identity function passes from origin and also from first , third quadrant .

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13. f and g are real functions defined by f(x)= 2x + 1 and g(x) =4x -7. If f(x) = g(x) then x = ...

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14. Let R be the relation on Z defined by $R = \{(a, b) : a, b \in Z, a - b \text{is an integer}\}$. Find the domain and range of R.

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17. If n(A) = p and n (B) = q then numbers of non void relations from A to B are $\left(2^{p+q} - 1\right)$.

Watch Video Solution

18. Let $R = \{(1, 3), (2, 2), (3, 2)\}$ and $S = \{(2, 1), (3, 2), (2, 3)\}$ be two relations on set $A = \{(1, 2, 3)\}$. Then, SoR is equal

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$A = \{3k \mid k \in N\} B = \{3k - 1 \mid k \in N\}$ and $C = \{3k - 2 \mid k \in N\}$.

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21. If $[n(A)]^3 = 8$ and $\{0, 1, 0\} \in A^3$ then a = {0,1}

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22. Let A = {x : x is a natural number},

B = {x : x is an even natural number},

C = {x : x is an odd natural number}

and D = {x : x is a prime number}.

Find

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23. $f: R \to R$, $f(x) = \sec^2 x - \tan^2 x$ is constant function .

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Trigonometric Functions Fill In The Blanks

1. Radian value of $47^\circ 30'$ is .....

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2. 2 Radian = ... Degree.

Watch Video Solution

3. Arc at the circle with length 37.4 cm subtends and angle of 60° at centre . Then its radius r = ...

Watch Video Solution

4. Angle made by the the arc of length 55 cm at center is .....if length of radius is 25 cm

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5. .....is the length of the arc of the circle with radius 28 cm and angle made by two radii at centre is 45° .

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6. Arc of length 15π subtends an angle $\frac{3\pi}{4}$ at centre then radius r = ...cm

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7. Measure of an angle of the regular polygon having ten sides is .....radian.

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8. Length of the arc of circle with radius 5 cm and angle at centre is 15° .....cm.

Watch Video Solution

9. Find the angle in radian through which a pendulum swings if its length is 75 cm and the tip describes an arc of length (i) 10 cm (ii) 15 cm (iii) 21cm.

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10. Graph of sin(x) function repeats its value in ..... Interval length.

Watch Video Solution

11. $2\sin^2\left(\frac{\pi}{4}\right) + 2\cos^2\left(\frac{\pi}{4}\right) + \sec^2\left(\frac{\pi}{3}\right)$ has value .....

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12. $\cos\left(\frac{\pi}{3}\right)\cos\left(\frac{\pi}{4}\right) + \sin\left(\frac{\pi}{3}\right)\sin\left(\frac{\pi}{4}\right)$ .....

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13. $\cos\left(\frac{65\pi}{4}\right) = \ldots\ldots\ldots$

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14. If $\cot x = -\sqrt{5}$ and x in second quadrant then sin x = ...

Watch Video Solution

15. $2\sin\left(\frac{5\pi}{12}\right)\sin\left(\frac{\pi}{12}\right) = \ldots\ldots\ldots$

Watch Video Solution

16. The value of $\frac{1-\tan^2(15^\circ)}{1+\tan^2(15^\circ)}$ is .....

Watch Video Solution

17. If $A + B + C = \pi$ then $\sec A(\cos B \cos C - \sin B \sin C) = \ldots\ldots\ldots$

Watch Video Solution

18. $3\sin\left(\frac{\pi}{9}\right) - 4\sin^3\left(\frac{\pi}{9}\right) = \ldots\ldots$

Watch Video Solution

19. One root of the equation $6x - 8x^3 = \sqrt{3}$ is .....

Watch Video Solution

20. $\frac{\sin(3\alpha)}{1 + 2\cos(2\alpha)} = \ldots\ldots\ldots$

Watch Video Solution

21. $\cos(47^\circ)\cos(13^\circ) - \sin(47^\circ)\sin(13^\circ) = \ldots\ldots\ldots$

Watch Video Solution

22. $\sin\left(\frac{7\pi}{12}\right)\cos\left(\frac{\pi}{4}\right) - \cos\left(\frac{7\pi}{12}\right)\sin\left(\frac{\pi}{4}\right) = \ldots\ldots\ldots .$

Watch Video Solution

23. Sum of the measure of an angle of cyclic quadrilateral ABCD is .....radian.

Watch Video Solution

24. Solution set of the equation $3\tan^2\theta + 4\tan\theta + 2 = 0$ is .....

Watch Video Solution

25. For ΔABC, sinA + sinB + sinC

Watch Video Solution

26. In $\Delta ABC, m\angle A = 90, m\angle B = 30$ and $a = 10^\circ$ then b = ...

Watch Video Solution

27. In ΔABC if $m\angle C = 90^\circ$ than $\tan A + \tan B$ = ...(where a, b, c are sides opposite to angles A, B, C respectively).

Watch Video Solution

28. Solution of the equation $2\cos x + 1 = 0$ is .....

Watch Video Solution

29. Height of the tower and multy storied building is same of 30 mets . The angle at elevation at some point joining base at both is α and β then .....

View Text Solution

30. .....is the angle of elevation of sun if height of building and its shadow are equal .

Watch Video Solution

31. At .....height one can reach by walking x mets with slope 30° and with height y met.

Watch Video Solution

32. Radian value of $47^\circ 30'$ is .....

Watch Video Solution

33. 2 Radian = ... Degree.

Watch Video Solution

34. Arc at the circle with length 37.4 cm subtends and angle of 60° at centre . Then its radius r = ...

Watch Video Solution

35. Angle made by the the arc of length 55 cm at center is .....if length of radius is 25 cm

Watch Video Solution

36. .....is the length of the arc of the circle with radius 28 cm and angle made by two radii at centre is 45° .

Watch Video Solution

37. Arc of length 15π subtends an angle $\frac{3\pi}{4}$ at centre then radius r = ...cm

Watch Video Solution

38. Measure of an angle of the regular polygon having ten sides is .....radian.

Watch Video Solution

39. Length of the arc of circle with radius 5 cm and angle at centre is 15° .....cm.

Watch Video Solution

40. .....is the measure of an angle in radian through which the pendulum swings if its length is 75 cm and makes an arc of length 21 cm

Watch Video Solution

41. Graph of sin(x) function repeats its value in ..... Interval length.

Watch Video Solution

42. $2\sin^2\left(\frac{\pi}{4}\right) + 2\cos^2\left(\frac{\pi}{4}\right) + \sec^2\left(\frac{\pi}{3}\right)$ has value .....

Watch Video Solution

43. $\cos\left(\frac{\pi}{3}\right)\cos\left(\frac{\pi}{4}\right) + \sin\left(\frac{\pi}{3}\right)\sin\left(\frac{\pi}{4}\right)$ .....

Watch Video Solution

44. $\cos\left(\frac{65\pi}{4}\right) = ...$

Watch Video Solution

45. If $\cot x = -\sqrt{5}$ and x in second quadrant then sin x = ...

Watch Video Solution

46. $2\sin\left(\frac{5\pi}{12}\right)\sin\left(\frac{\pi}{12}\right) = ...$

Watch Video Solution

47. The value of $\frac{1-\tan^2(15^\circ)}{1+\tan^2(15^\circ)}$ is .....

Watch Video Solution

48. If $A+B+C=\pi$ then $\sec A(\cos B\cos C - \sin B\sin C) = ...$

Watch Video Solution

49. $3\sin\left(\frac{\pi}{9}\right) - 4\sin^3\left(\frac{\pi}{9}\right) = ...$

Watch Video Solution

50. One root of the equation $6x - 8x^3 = \sqrt{3}$ is .....

Watch Video Solution

51. $\dfrac{\sin(3\alpha)}{1 + 2\cos(2\alpha)} =$ .....

Watch Video Solution

52. $\cos(47^\circ)\cos(13^\circ) - \sin(47^\circ)\sin(13^\circ) =$ .....

Watch Video Solution

53. $\sin\left(\dfrac{7\pi}{12}\right)\cos\left(\dfrac{\pi}{4}\right) - \cos\left(\dfrac{7\pi}{12}\right)\sin\left(\dfrac{\pi}{4}\right) =$ ..... .

Watch Video Solution

54. Sum of the measure of an angle of cyclic quadrilateral ABCD is .....radian.

Watch Video Solution

55. Solution set of the equation $3\tan^2\theta + 4\tan\theta + 2 = 0$ is .....

Watch Video Solution

56. For ΔABC , sinA + sinB + sinC

Watch Video Solution

57. In $\Delta ABC, m\angle A = 90, m\angle B = 30$ and $a = 10^\circ$ then b = ...

Watch Video Solution

58. In ΔABC if $m\angle C = 90^\circ$ than $\tan A + \tan B$ = ...

Watch Video Solution

59. Solution of the equation $2\cos x + 1 = 0$ is .....

Watch Video Solution

60. Height of the tower and multy storied building is same of 30 mets . The angle at elevation at some point joining base at both is α and β then .....

View Text Solution

61. .....is the angle of elevation of sun if height of building and its shadow are equal .

Watch Video Solution

62. At .....height one can reach by walking x mets with slope 30° and with height y met.

Watch Video Solution

Trigonometric Functions True False Statement

1. Value of the rotation of point P on unit circle increase in multiple of 2π then value of sine and cosine does not change .

Watch Video Solution

2. If $\tan\theta = 3$ and θ is in third quadrant then $\sin\theta = \frac{3}{\sqrt{10}}$.

Watch Video Solution

3. $\sin^4\theta + \cos^4\theta + 2\sin^2\theta\cos^2\theta$ has value 1.

Watch Video Solution

4. Point of intersection of the graph of sine function with X - axis has value zero.

Watch Video Solution

5. If $f(x) = \cos^2 x + \sec^2 x,$ then

Watch Video Solution

6. $\text{cosec}\theta = \frac{1}{2}$

Watch Video Solution

7. $\tan(20^\circ) > \tan(120^\circ)$

Watch Video Solution

8. If $0 < \theta < \frac{\pi}{2}$ and $5\tan\theta = 4$ then $\frac{5\sin\theta - 3\cos\theta}{\sin\theta + 2\cos\theta} = \frac{5}{14}$

Watch Video Solution

9. If $\operatorname{cosec}\theta + \cot\theta = \frac{13}{5}$ then $\cot^2\theta - \operatorname{cosec}^2\theta = \frac{25}{12}$

Watch Video Solution

10. $\cos(2\pi - x)\cos(-x) - \sin(2\pi + x)\sin(-x) = 0$

Watch Video Solution

11. $3\sin\left(\frac{\pi}{9}\right) - 4\sin^3\left(\frac{\pi}{9}\right) = ...$

Watch Video Solution

12. $\sin\theta = \frac{3}{5}, \frac{\pi}{2} < \theta < \pi \sin 2\theta = \frac{-12}{25}$

Watch Video Solution

13. If $\tan\theta = \sqrt{2} - 1$ then tan $(2\theta) = 1$.

Watch Video Solution

14. If in two circles, arcs of the same length subtend angles 60° and 75° at the centre, find the ratio of their radii.

Watch Video Solution

15. If $x + y = \frac{2\pi}{3}$ then equation $\cos x + \cos y = \frac{3}{2}$ has empty solution set.

Watch Video Solution

16. If $\tan\theta - \tan^2\theta = 1$, then $\tan^4\theta - 2\tan^3\theta - \tan^2\theta + 2\tan\theta + 1$ has value 4.

Watch Video Solution

17. Number of solution of equation $\cos^4 x - 2\cos^2 x + 1 = 0$ in interval $[0, 2\pi]$ are only two .

Watch Video Solution

18. If $\tan\theta = \frac{1}{2}$ and $\tan\phi = \frac{1}{3}$, then the value of $\theta + \phi$ is

Watch Video Solution

19. f(x) = 3 cos x + 4 sin x + 8 has minimum value 19.

Watch Video Solution

20. If in $\Delta ABC a = 9, b = 7$ and $\sin A = \frac{3}{4}$ then ΔABC is right angle .

Watch Video Solution

21. Value of the rotation of point P on unit circle increase in multiple of 2π then value of sine and cosine does not change .

Watch Video Solution

22. If $\tan\theta = 3$ and θ is in third quadrant then $\sin\theta = \frac{3}{\sqrt{10}}$.

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23. $\sin^4\theta + \cos^4\theta + 2\sin^2\theta\cos^2\theta$ has value 1.

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28. If $0 < \theta < \frac{\pi}{2}$ and $5\tan\theta = 4$ then $\frac{5\sin\theta - 3\cos\theta}{\sin\theta + 2\cos\theta} = \frac{5}{14}$

Watch Video Solution

29. If $\operatorname{cosec}\theta + \cot\theta = \frac{13}{5}$ then $\cot^2\theta - \operatorname{cosec}^2\theta = \frac{25}{12}$

Watch Video Solution

30. $\cos(2\pi - x)\cos(-x) - \sin(2\pi + x)\sin(-x) = 0$

Watch Video Solution

31. $3\sin\left(\frac{\pi}{9}\right) - 4\sin^3\left(\frac{\pi}{9}\right) = ...$

Watch Video Solution

32. $\sin\theta = \frac{3}{5}, \frac{\pi}{2} < \theta < \pi \sin 2\theta = \frac{-12}{25}$

Watch Video Solution

33. If $\tan\theta = \sqrt{2} - 1$ then tan $(2\theta) = 1$.

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Watch Video Solution

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Watch Video Solution

36. If $\tan\theta - \tan^2\theta = 1$, then $\tan^4\theta - 2\tan^3\theta - \tan^2\theta + 2\tan\theta + 1$ has value 4.

Watch Video Solution

37. The number of solutions of equation $\tan x + \sec x = 2\cos x$ lying in the interval $[0, 2\pi]$ is

Watch Video Solution

38. If $\tan\theta = \frac{1}{2}$ and $\tan\phi = \frac{1}{3}$, then the value of $\theta + \phi$ is

Watch Video Solution

39. f(x) = 3 cos x + 4 sin x + 8 has minimum value 19.

Watch Video Solution

40. If in $\Delta ABCa = 9, b = 7$ and $\sin A = \frac{3}{4}$ then ΔABC is right angle

.

Watch Video Solution

Principle Of Mathematical Induction Fill In The Blanks

1. $P(n) : 2^n - 1$, for n = ...it is a prime number.

Watch Video Solution

2. If.....is true and P(k) is true $\Rightarrow$ P(k+1) is true, $k \geq -1$, then for all $n \in N \cup \{0, -1\}, P(n)$ is true.

Watch Video Solution

3. P(n) : n (n+1) is even number then P(3) = ...

Watch Video Solution

4. $P(n): 1^2 + 2^2 + 3^2 + \ldots\ldots + n^2 = \frac{n}{6}(n+1)(2n+1) n \in N$ is true then $1^2 + 2^2 + 3^2 + \ldots\ldots . + 10^2 = \ldots\ldots$

Watch Video Solution

5. Statement P (n) : $10^n + 3\left(4^{n+2}\right) + 5$ is divisible by n = ...

Watch Video Solution

6. $P(n): 2n + 1$, for n = ...it is not a prime number.

Watch Video Solution

7. $P(n): 2^n > n^2,$ for n = ...it is true.

Watch Video Solution

8. $P(n): n^2 - n + 41$, for n = ..., it is not prime number .

Watch Video Solution

9. .....is the remainder if P (n) : $3^{2n+2} - 8n$ is divided by 64.

Watch Video Solution

10. Statement $P(n): n^3 + 3n^2 + 5n + 3$ is multiple of .....smellest odd number.

Watch Video Solution

11. $P(n): 2^n - 1$, for n = ...it is a prime number.

Watch Video Solution

12. If.....is true and P(k) is true $\Rightarrow$ P(k+1) is true, $k \geq -1$, then for all $n \in N \cup \{0, -1\}, P(n)$ is true.

Watch Video Solution

13. P(n) : n (n+1) is even number then P(3) = ...

Watch Video Solution

14. $P(n): 1^2 + 2^2 + 3^2 + ... + n^2 = \frac{n}{6}(n+1)(2n+1) n \in N$ is true then $1^2 + 2^2 + 3^2 + ... + 10^2 = ...$

Watch Video Solution

15. Statement P (n) : $10^n + 3\left(4^{n+2}\right) + 5$ is divisible by n = ...

Watch Video Solution

16. P(n) : n (n+1) is even number then P(3) = ...

Watch Video Solution

17. $P(n): 2^n > n^2,$ for n = ...it is true.

Watch Video Solution

18. If $a_1, a_2, a_3, \ldots, a_{n+1}$ be (n+1) different prime numbers, then the number of different factors (other than 1) of $a_1^m, a_2 \cdot a_3, .., a_{n+1}$ is

Watch Video Solution

19. .....is the remainder if P (n) : $3^{2n+2} - 8n$ is divided by 64.

Watch Video Solution

20. Statement $P(n): n^3 + 3n^2 + 5n + 3$ is multiple of .....smellest odd number.

Watch Video Solution

Complex Numbers And Quadratic Equations Fill In The Blanks

1. For some integer k, $i^{4k} + i^{4k+1} + i^{4k+2} + i^{4k+3}$ = ...

Watch Video Solution

2. $(1 - i) - (-1 + i6) =$ .....

Watch Video Solution

3. Multiplicative inverse of complex number z = 2 - 3i is .....

Watch Video Solution

4. Express $(5-3i)^3$ in the form a+ib.

Watch Video Solution

5. $z=\frac{1+i}{1-i}$ then z^4 = ...

Watch Video Solution

6. If $|z_1|=|z_2|=|z_3|=\left|\frac{1}{z_1}+\frac{1}{z_2}+\frac{1}{z_3}\right|=1$ then $|z_1+z_2+z_3|$ = ...

Watch Video Solution

7. If one complex number is in third quadrent then its conjugate complex number is in ..... quadrent.

Watch Video Solution

8. Complex number with magnitude 2 and argument $\frac{2\pi}{3}$ is = ...

Watch Video Solution

9. If z = (x,-y) then point (x,y) with respect to real axis is called.

Watch Video Solution

10. What is the general form of the points which lie on X-axis?

Watch Video Solution

11. If |z| = 2 and arg $z = \frac{\pi}{4}$ then z = ...

Watch Video Solution

12. $(1+i)^4 + (1-i)^4$ = ...

Watch Video Solution

13. Find argument of the complex numbers $z = \sqrt{3} + i$

Watch Video Solution

14. If (2+5i) z = (3 - 7 i) then z = ...

Watch Video Solution

15. If $\left(\frac{1+i}{1-i}\right)^{100} = x + iy$ then (x,y) = ...

Watch Video Solution

16. Conjugate of the complex number is $\frac{1}{1-i}$ then complex number is .....

Watch Video Solution

17. $arg(-1) = \ldots\ldots\ldots$

Watch Video Solution

18. In Argand figure complex number $\frac{1+2i}{1-i}$ lies in ..... quadrent.

Watch Video Solution

19. If $z = x + iy$ and $x + iy = \frac{a+ib}{a-ib}$ then $x^2 + y^2 = 1$.

Watch Video Solution

20. ..... is the minimum value of n such that $(1+i)^{2n} = (1-i)^{2n}$.

Where $n \in N$.

Watch Video Solution

21. For some integer k, $i^{4k} + i^{4k+1} + i^{4k+2} + i^{4k+3}$ = ...

Watch Video Solution

22. $(1 - i) - (-1 + i6) =$ .....

Watch Video Solution

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Watch Video Solution

24. Express $(5 - 3i)^3$ in the form a+ib.

Watch Video Solution

25. $z = \dfrac{1+i}{1-i}$ then z^4 = ...

Watch Video Solution

26. If $|z_1| = |z_2| = |z_3| = \left|\frac{1}{z_1} + \frac{1}{z_2} + \frac{1}{z_3}\right| = 1$ then $|z_1 + z_2 + z_3|$ = ...

.

Watch Video Solution

27. If one complex number is in third quadrent then its conjugate complex number is in ..... quadrent.

Watch Video Solution

28. Complex number with magnitude 2 and argument $\frac{2\pi}{3}$ is = ...

Watch Video Solution

29. If z = (x,-y) then point (x,y) with respect to real axis is called.

Watch Video Solution

30. ..... Is the general form of the complex number of the point lies on real axis . (i.e. X axis)

Watch Video Solution

31. If |z| = 2 and arg $z = \frac{\pi}{4}$ then z = ...

Watch Video Solution

32. $(1+i)^4 + (1-i)^4$ = ...

Watch Video Solution

33. Find argument of the complex numbers $z = \sqrt{3} + i$

Watch Video Solution

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Watch Video Solution

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Watch Video Solution

40. ..... is the minimum value of n such that $(1+i)^{2n} = (1-i)^{2n}$.

Where $n \in N$.

Watch Video Solution

Complex Numbers And Quadratic Equations True False Statement

1. If (5,6) + z = (2,-1) then z = (3,-7)

Watch Video Solution

2. (0,2) . (0,2) = (0,4)

Watch Video Solution

3. $i^9 + i^{10} - 3i^{12} = -4$

Watch Video Solution

4. For complex number $z = 3 - 2i$, $z + \bar{z} = 2iIm(z)$.

Watch Video Solution

5. For complex number z = 5 + 3i value $z - \bar{z} = 10$.

Watch Video Solution

6. Inverse of (7,0) does not exists.

Watch Video Solution

7. The polar coordinate of complex number $z = 1 + i\sqrt{3}$ is $\left(2, \frac{\pi}{3}\right)$.

Watch Video Solution

8. Equation having n degree has n solution.

Watch Video Solution

9. If $z = x + iy$ and $x + iy = \frac{a + ib}{a - ib}$ then $x^2 + y^2 = 1$.

Watch Video Solution

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18. If $z = x + iy$ and $x + iy = \frac{a + ib}{a - ib}$ then $x^2 + y^2 = 1$.

Watch Video Solution

Linear In Equalities Fill In The Blanks

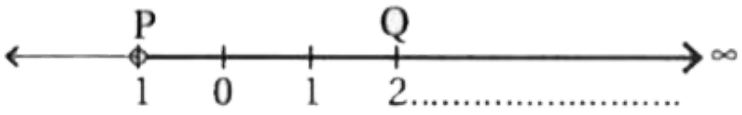
1. .....is the solution set for inequality $3x + 8 > 2,$ x is real number.

Watch Video Solution

2. If $|x - 1| > 5$ then $x \in$ .....

Watch Video Solution

3. ..... is the solution set of the given graph.



Watch Video Solution

4. .....is the minimum value of x which satisfy the in quality $2x + 4 + 3(x - 5) > 7.$

Watch Video Solution

5. .....is the necessary condition if solution region of $ax + by + c > 0$ contains origin. (0,0) .

Watch Video Solution

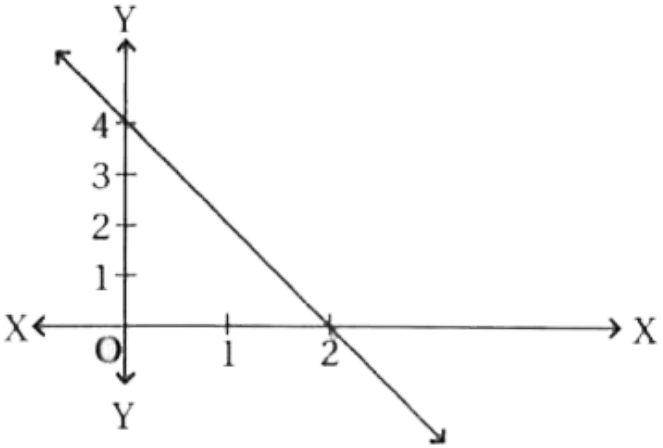
6. For inequality $\frac{x+2}{x+3} > 1$ the numbers of positive integral solution is .....

Watch Video Solution

7. 23 - | 2x + 3| has maximum value .....

Watch Video Solution

8. .....is the inequality represented by following graph .



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9. The number of NOT integral solution of the inequality $\frac{x-7}{x-9} > 0$ are .....

Watch Video Solution

10. If $0 \leq \frac{2x-5}{2} \leq 7$ and x is integer then sum of its maxi and minimum value is .....

Watch Video Solution

11. .....is the solution set for inequality $3x + 8 > 2,$ x is real number.

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Watch Video Solution

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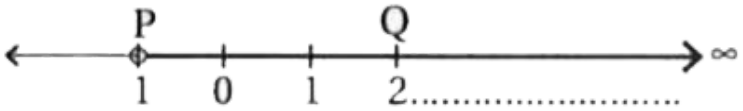

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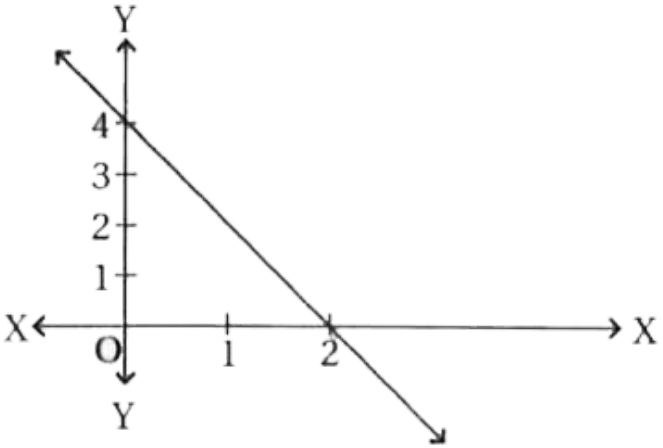

Watch Video Solution

19. The number of NOT integral solution of the inequality $\frac{x-7}{x-9} > 0$ are .....

Watch Video Solution

20. If $0 < \frac{2x-5}{2} < 7$ and x is integer then sum of its maxi and minimum value is .....

Watch Video Solution

Linear In Equalities True False Statement

1. For $x \in N$ solution set of $x + 2 < -8$ is null set.

Watch Video Solution

2. Inequality 3(x-1) + 2 (x-2) $< 5(x + 2)$ is true for each $x \in R$.

Watch Video Solution

3. Solution set of $x \geq 3$ and $x \leq 5, x \in R$ is [3,5]

Watch Video Solution

4. Graph of inequality $x - 3 < 5$ and $3x + 5 < 2x \in R$ is as follows

Watch Video Solution

5. If $|x - 2| < 3$ then $-1 < x < 5$.

Watch Video Solution

6. If $\frac{1}{x - 4} < 0$ then $x > 4$.

Watch Video Solution

7. Solution set of inequality $|x - 1| < -1$ is set R .

Watch Video Solution

8. For $x \in N$ solution set of $x + 2 < -8$ is null set.

Watch Video Solution

9. Inequality $3(x-1) + 2(x-2) < 5(x+2)$ is true for each $x \in R$.

Watch Video Solution

10. Solution set of $x \geq 3$ and $x \leq 5, x \in R$ is [3,5]

Watch Video Solution

11. Graph of inequality $x - 3 < 5$ and $3x + 5 < 2x \in R$ is as follows

Watch Video Solution

12. If $|x-2|<3$ then $-1<x<5$.

Watch Video Solution

13. If $\frac{1}{x-4}<0$ then $x>4$.

Watch Video Solution

14. Solution set of inequality $|x-1|<-1$ is set R .

Watch Video Solution

Permutations And Combinations Fill In The Blanks

1. .....are the numbers of words using the letters of word ROSE with its meaning or without its meaning.

Watch Video Solution

2. Evaluate $\frac{n!}{r!(n-r)!}$, when n = 5, r = 2.

Watch Video Solution

3. If $\frac{1}{8!}+\frac{1}{9!}=\frac{x}{10!}$, find x.

Watch Video Solution

4. $6P_3 - 5P_2$ = ...

Watch Video Solution

5. $\frac{nP_4}{(n-1)P_4}=\frac{5}{3}$ then n = ... (where $n > 4$)

Watch Video Solution

6. If $(n+1)! = 12(n-1)!$ then n = ... $n \in N$

Watch Video Solution

7. If $nP_4 : nP_5 = 1:2$ then n = ...

Watch Video Solution

8. If the repetation is not allowed then we get ..... total numbers of 5 digits from the digits 0, 2,4,6 and 8.

Watch Video Solution

9. .....are the 9 digit numbers formed from the number with all digits different.

Watch Video Solution

10. .....are the total numbers words formed by the letters of the word 'KUMAR' .

Watch Video Solution

11. The managing director of 'KUMAR PRAKASHAN KENDRA' arranges an exam of 100 marks to know the talent of student in Mathematics and English Subjects. Each question has two option true and false. In ..... Numbers of ways student can answer the question.

View Text Solution

12. $n\left((n-1)P_{(r-1)}\right) =$ ..... .

Watch Video Solution

13. .....are the total numbers of ways to make a password of 5 digit for computer which contains 2 digits from computer which alphabet from 26 alphabets.

Watch Video Solution

14. .....are the numbers of 7 digit formed by digits 3,4,5,4,5,5 and 9.

Watch Video Solution

15. ${}_nP_r + \binom{n}{r} =$ .....

Watch Video Solution

16. If $\binom{n}{12} = \binom{n}{8}$ then n = ...

Watch Video Solution

17. If ${}^nC_9 = {}^nC_8$, find ${}^nC_{17}$.

Watch Video Solution

18. If $\begin{pmatrix} 20 \\ r \end{pmatrix} = \begin{pmatrix} 20 \\ r+2 \end{pmatrix}$ then $\begin{pmatrix} r \\ 2 \end{pmatrix} = \ldots\ldots\ldots$

Watch Video Solution

19. Number of diagonal of the polygon having 10 sides = ...

Watch Video Solution

20. The numbers of rectangle formed by m horizontal and n vertical line are .....

Watch Video Solution

21. If $\begin{pmatrix} 79 \\ r \end{pmatrix}$ is maximum then r = ...

Watch Video Solution

22. There are 21 points on circle . The number of chord by joining there points are ..... .

Watch Video Solution

23. If $\begin{pmatrix} 2n \\ 3 \end{pmatrix} = 11\begin{pmatrix} n \\ 3 \end{pmatrix}$ then n = ...

Watch Video Solution

24. If $\begin{pmatrix} 2n \\ 3 \end{pmatrix} \div \begin{pmatrix} n \\ 2 \end{pmatrix} = 12$ then n = ...

Watch Video Solution

25. A person has one currency not each of Rs 500, Rs 100, Rs 50 , Rs 20 and Rs 10 . Then in ..... numbers of ways he can made his payments .

View Text Solution

26. .....are the numbers of words using the letters of word ROSE with its meaning or without its meaning.

Watch Video Solution

27. Evaluate $\frac{n!}{r!(n-r)!}$, when n = 5, r = 2.

Watch Video Solution

28. If $\frac{1}{8!}+\frac{1}{9!}=\frac{x}{10!}$, find x.

Watch Video Solution

29. $6P_3 - 5P_2$ = ...

Watch Video Solution

30. $\frac{nP_4}{(n-1)P_4} = \frac{5}{3}$ then n = ... (where $n > 4$)

Watch Video Solution

31. If $(n+1)! = 12(n-1)!$ then n = ... $n \in N$

Watch Video Solution

32. If $nP_4 : nP_5 = 1:2$ then n = ...

Watch Video Solution

33. If the repetation is not allowed then we get ..... total numbers of 5 digits from the digits 0, 2,4,6 and 8.

Watch Video Solution

34. .....are the 9 digit numbers formed from the number with all digits different.

Watch Video Solution

35. .....are the total numbers words formed by the letters of the word 'KUMAR' .

Watch Video Solution

36. In an examination, there are three multiple choice questions and each question has four choices. Number of ways in which a student can fail to

get all answers correct, is

Watch Video Solution

37. $n\left((n-1)P_{(r-1)}\right) = \ldots\ldots\ldots\ldots\ldots$.

Watch Video Solution

38. .....are the total numbers of ways to make a password of 5 digit for computer which contains 2 digits from computer which alphabet from 26 alphabets.

Watch Video Solution

39. .....are the numbers of 7 digit formed by digits 3,4,5,4,5,5 and 9.

Watch Video Solution

40. ${}_nP_r + \binom{n}{r} = \ldots\ldots\ldots$

Watch Video Solution

41. If $\binom{n}{12} = \binom{n}{8}$ then n = ...

Watch Video Solution

42. If ${}^nC_9 = {}^nC_8$, find ${}^nC_{17}$.

Watch Video Solution

43. If $\binom{20}{r} = \binom{20}{r+2}$ then $\binom{r}{2} = \ldots\ldots\ldots . .$

Watch Video Solution

44. Number of diagonal of the polygon having 10 sides = ...

Watch Video Solution

45. The numbers of rectangle formed by m horizontal and n vertical line are .....

Watch Video Solution

46. If $\begin{pmatrix} 79 \\ r \end{pmatrix}$ is maximum then r = ...

Watch Video Solution

47. There are 21 points on circle . The number of chord by joining there points are ..... .

Watch Video Solution

48. If $\begin{pmatrix} 2n \\ 3 \end{pmatrix} = 11\begin{pmatrix} n \\ 3 \end{pmatrix}$ then n = ...

Watch Video Solution

49. If $\binom{2n}{3} \div \binom{n}{2} = 12$ then n = ...

Watch Video Solution

50. A person has one currency not each of Rs 500, Rs 100, Rs 50 , Rs 20 and Rs 10 . Then in ..... numbers of ways he can made his payments .

View Text Solution

Permutations And Combinations True False Statement

1. If an even can occur in m ways and corresponding to each way another event can occur in p ways, then total number of occurrence of events is m.p.

Watch Video Solution

2. If repetation is allowed then n objects can be arranged in r places is n.r.

Watch Video Solution

3. n(A)= m, n (B) = n. The total number of non empty relation from A to B is.....

Watch Video Solution

4. Total numbers of 4 digits numbers using digits 5,2,3,7 and 8 are 620.

Watch Video Solution

5. $\frac{10!}{8!} = 9$.

Watch Video Solution

6. 7 persons can sit on round table for discussion in $7!$ ways.

Watch Video Solution

7. $\binom{n}{r} + \binom{n}{r-1} = \binom{n+1}{r-1}$

Watch Video Solution

8. If $\binom{n}{5} = \binom{n}{13}$ then ${}^{n}C_{2} = \ldots\ldots\ldots$

Watch Video Solution

9. The product of two consecutive positive integers is always divisible by .....

Watch Video Solution

10. $\binom{n}{r} + 2.\binom{n}{r-1} + \binom{n}{r-2} = \binom{n+2}{r}$

Watch Video Solution

11. If an even can occur in m ways and corresponding to each way another event can occur in p ways, then total number of occurrence of events is m.p.

Watch Video Solution

12. If repetation is allowed then n objects can be arranged in r places is n.r.

Watch Video Solution

13. Let $n(A) = 5$ and $n(B) = 3$ then find the number of injective functions and onto functions from A to B.

Watch Video Solution

14. Total numbers of 4 digits numbers using digits 5,2,3,7 and 8 are 620.

Watch Video Solution

15. $\frac{10!}{8!} = 9$.

Watch Video Solution

16. 7 persons can sit on round table for discussion in $7!$ ways.

Watch Video Solution

17. $\binom{n}{r} + \binom{n}{r-1} = \binom{n+1}{r-1}$

Watch Video Solution

18. If $\begin{pmatrix} n \\ 5 \end{pmatrix} = \begin{pmatrix} n \\ 13 \end{pmatrix}$ then ${}^{n}C_{2} = \ldots\ldots\ldots$

Watch Video Solution

19. The product of two consecutive positive integers is always divisible by .....

Watch Video Solution

20. $\begin{pmatrix} n \\ r \end{pmatrix} + 2.\begin{pmatrix} n \\ r-1 \end{pmatrix} + \begin{pmatrix} n \\ r-2 \end{pmatrix} = \begin{pmatrix} n+2 \\ r \end{pmatrix}$

Watch Video Solution

Binomial Theorem Fill In The Blanks

1. The numbers of terms in the expansion $\left[(x+4y)^{4}\right]^{5}$ is .....

Watch Video Solution

2. Number of terms in expansion.

$\left(x^2 - 4x + 4\right)^9$ are ..... .

Watch Video Solution

3. Number of terms in expansion $(x + y)^{1000} + (x - y)^{1000}$ are ..... .

Watch Video Solution

4. $\sum_{r=0}^{1\theta} \binom{10}{r} .2^{10-r}(- 5)^r = ...$

Watch Video Solution

5. The coefficient of x^m and x^n in the expansion of $(1 + x)^{m+n}$ are .....

Watch Video Solution

6. Middle term in the expansion $\left(x+\frac{1}{x}\right)^{2n}$ is ..... .

Watch Video Solution

7. $2^{2n}-3n-1$ is divisible by ..... .

Watch Video Solution

8. $\binom{n}{1}+\binom{n}{2}+\binom{n}{3}+\ldots\ldots\ldots .+\binom{n}{n-1}=\ldots\ldots\ldots .$

Watch Video Solution

9. The numbers of terms in the expansion $\left[(x+4y)^4\right]^5$ is .....

Watch Video Solution

10. Number of terms in expansion.

$\left(x^2 - 4x + 4\right)^9$ are ..... .

Watch Video Solution

11. Number of terms in expansion $(x+y)^{1000} + (x-y)^{1000}$ are ..... .

Watch Video Solution

12. $\sum_{r=0}^{1\theta} \binom{10}{r} .2^{10-r}(-5)^r = ...$

Watch Video Solution

13. The coefficient of x^m and x^n in the expansion of $(1+x)^{m+n}$ are .....

Watch Video Solution

14. Middle term in the expansion $\left(x+\frac{1}{x}\right)^{2n}$ is ..... .

Watch Video Solution

15. $2^{2n}-3n-1$ is divisible by ..... .

Watch Video Solution

16. $\binom{n}{1}+\binom{n}{2}+\binom{n}{3}+\ldots\ldots\ldots .+\binom{n}{n-1}=\ldots\ldots\ldots .$

Watch Video Solution

Binomial Theorem True False Statement

1.

$\binom{n}{0}-\binom{n}{1}+\binom{n}{2}-\binom{n}{3}+\binom{n}{4}-\binom{n}{5}\ldots\ldots\ldots+(-1)^n\binom{n}{n}=$

.

Watch Video Solution

2. The sum of the coefficients in the expansion of $(a+b)^n$ is 4096. Then ..... Is the biggest coefficient .

Watch Video Solution

3. Numbers of terms in expansion $(2x+3y+4z)^7$ are 8 .

Watch Video Solution

4. ..... is the middle term in expansion of $\left(2x+\frac{1}{2x}\right)^8$.

Watch Video Solution

5. Sum of the coefficient in expansion $(x+y+z)^n$ is 3^n .

Watch Video Solution

6. Sum of the power of a and b in expansion $(a+b)^n$ is n .

Watch Video Solution

7. Difference of (r+1) term from beginning and (r+1) term from last in expansion $(a+b)^n$ is 2 $\begin{pmatrix} n \\ r \end{pmatrix}$.

View Text Solution

8. Coefficient of x^3 in expansion $(1+x)^n$ is 20 then $n=6$.

Watch Video Solution

9. The coefficient of T_5 and T_{19} in expansion $(1+x)^n$ are equal then n = 14.

Watch Video Solution

10. $\binom{12}{1}+\binom{12}{3}+\binom{12}{5}+\ldots..+\binom{12}{11}=2^{12}.$

Watch Video Solution

11.

$\binom{n}{0}-\binom{n}{1}+\binom{n}{2}-\binom{n}{3}+\binom{n}{4}-\binom{n}{5}\ldots\ldots\ldots+(-1)^{n}\binom{n}{n}=$

.

Watch Video Solution

12. The sum of the coefficients in the expansion of $(a+b)^{n}$ is 4096. Then ..... Is the biggest coefficient .

Watch Video Solution

13. Numbers of terms in expansion $(2x+3y+4z)^{7}$ are 8 .

Watch Video Solution

14. ..... is the middle term in expansion of $\left(2x+\frac{1}{2x}\right)^8$.

Watch Video Solution

15. Sum of the coefficient in expansion $(x+y+z)^n$ is 3^n .

Watch Video Solution

16. Sum of the power of a and b in expansion $(a+b)^n$ is n .

Watch Video Solution

17. Difference of (r+1) term from beginning and (r+1) term from last in expansion $(a+b)^n$ is 2 $\binom{n}{r}$.

View Text Solution

18. Coefficient of x^3 in expansion $(1+x)^n$ is 20 then $n=6$.

Watch Video Solution

19. The coefficient of T_5 and T_{19} in expansion $(1+x)^n$ are equal then n = 14.

Watch Video Solution

20. $\binom{12}{1}+\binom{12}{3}+\binom{12}{5}+\ldots..+\binom{12}{11}=2^{12}.$

Watch Video Solution

Sequence And Series Fill In The Blanks

1. ..... is the 20^{th} term of sequence $a_n=(n-1)(2-n)(n-3).$

Watch Video Solution

2. $3, \frac{9}{2}, 6, \frac{15}{2}$ ..... Sequence has 10^{th} term a_{10} = ...

Watch Video Solution

3. 9^{th} term of arithmetic sequence is 30 then sum of its 17 terms ..... .

Watch Video Solution

4. Third term of arithmetic sequence is 9 and tenth term is 21. Then sum of its 12 term is ..... .

Watch Video Solution

5. For arithmetic sequence a = 2 and $a_5 = 14$ then d = ...

Watch Video Solution

6. For arithmetic sequence $a_8 = 23$ common difference d = 5 then a = ...

Watch Video Solution

7. For arithmetic sequence a = 2 and $a_5 = 14$ then d = ...

Watch Video Solution

8. For an A.P a = 20 and l = 97 then $S_{20} =$ .....

Watch Video Solution

9. If a, b, and c are in A.P then $(a + 2b - c).(2b + c - a).(c + a - b)$ = ...

Watch Video Solution

10. For arithmetic sequence a_1, a_2, a_3 ..... If $a_1 + a_5 + a_{10} + a_{15} + a_{20} + a_{24} = 225$ then $s_{24} =$ .....

Watch Video Solution

11. If 25, x - 6 and x - 12 are in G.P then x = ... or ..... .

Watch Video Solution

12. Third term of G.P. is 3 then product of its first 5 terms is .....

Watch Video Solution

13. Eighth term of G.P is 128 and common ratio is r = 2 then product of first 5 terms = ...

Watch Video Solution

14. For an G.P. a = 16 and fifth term is 81 then common ratio .....

Watch Video Solution

15. How many terms of G.P. $3, 3^2, 3^3,$ ... are needed to give the sum 120?

Watch Video Solution

16. Find the 20th and nth term of the GP.

$\frac{5}{2}, \frac{5}{4}, \frac{5}{8}$.....

Watch Video Solution

17. A_1 and A_2 are arithmetic mean between a and b also G_1 and G_2 are geometric mean then $\frac{G_1 . G_2}{A_1 + A_2}$ = ...

Watch Video Solution

18. For numbers 6 and 24, A - G = ...

Watch Video Solution

19. 10 is Geometric mean between 5 and x then x = ... Where $x \in R^+$.

Watch Video Solution

20. 12 is arithmetic mean between x and 22 then x = ...

Watch Video Solution

21. 10 arithmetic mean between a and b are $A_1, A_2, A_3 \ldots\ldots\ldots A_{10}$ then

$A_1 + A_2 + A_3 + \ldots\ldots\ldots . \ + A_{10} = \ldots\ldots . .$

Watch Video Solution

22. If $\sum n = 55$ then $\sum n^2$. = ...

Watch Video Solution

23. $\sum_{r=1}^{n} (2r + 1) =$ ..... .

Watch Video Solution

24. Sum of the series $1 - \frac{1}{2} + \frac{1}{2^2} - \frac{1}{2^3} +$ .....$\infty =$ .....

Watch Video Solution

25. ..... is the 20^{th} term of sequence $a_n = (n-1)(2-n)(n-3)$.

Watch Video Solution

26. $3, \frac{9}{2}, 6, \frac{15}{2}$ ..... Sequence has 10^{th} term a_{10} = ...

Watch Video Solution

27. 9^{th} term of arithmetic sequence is 30 then sum of its 17 terms ..... .

Watch Video Solution

28. Third term of arithmetic sequence is 9 and tenth term is 21. Then sum of its 12 term is ..... .

Watch Video Solution

29. For arithmetic sequence a = 2 and $a_5 = 14$ then d = ...

Watch Video Solution

30. For arithmetic sequence $a_8 = 23$ common difference d = 5 then a = ...

Watch Video Solution

31. For arithmetic sequence

View Text Solution

32. For an A.P a = 20 and l = 97 then $S_{20} =$ .....

Watch Video Solution

33. If a, b, and c are in A.P then $(a + 2b - c).(2b + c - a).(c + a - b)$ = ...

Watch Video Solution

34. For arithmetic sequence a_1, a_2, a_3 ..... If $a_1 + a_5 + a_{10} + a_{15} + a_{20} + a_{24} = 225$ then $s_{24} =$ .....

Watch Video Solution

35. If 25, x - 6 and x - 12 are in G.P then x = ... or ..... .

Watch Video Solution

36. Third term of G.P. is 3 then product of its first 5 terms is .....

Watch Video Solution

37. Eighth term of G.P is 128 and common ratio is r = 2 then product of first 5 terms = ...

Watch Video Solution

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Watch Video Solution

39. How many terms of G.P. $3, 3^2, 3^3, \ldots$ are needed to give the sum 120?

Watch Video Solution

40. For an geometric seq. $\frac{5}{2}, \frac{5}{4}, \frac{5}{8} \ldots\ldots a_n = \ldots\ldots\ldots\ldots$.

Watch Video Solution

41. A_1 and A_2 are arithmetic mean between a and b also G_1 and G_2 are geometric mean then $\frac{G_1 . G_2}{A_1 + A_2}$ = ...

Watch Video Solution

42. For numbers 6 and 24, A - G = ...

Watch Video Solution

43. 10 is Geometric mean between 5 and x then x = ... Where $x \in R^+$.

Watch Video Solution

44. 12 is arithmetic mean between x and 22 then x = ...

Watch Video Solution

45. 10 arithmetic mean between a and b are $A_1, A_2, A_3 \ldots\ldots\ldots A_{10}$ then

$A_1 + A_2 + A_3 + \ldots\ldots\ldots . \ + A_{10} = \ldots\ldots . .$

Watch Video Solution

46. If $\sum n = 55$ then $\sum n^2$. = ...

Watch Video Solution

47. $\sum_{r=1}^{n}(2r+1) = \ldots\ldots .$

Watch Video Solution

48. Sum of the series $1 - \frac{1}{2} + \frac{1}{2^2} - \frac{1}{2^3} + \ldots\ldots\ldots\infty = \ldots\ldots\ldots$

Watch Video Solution

Sequence And Series True False Statement

1. a and b are non zero real numbers and $n \in N$ then $a_n = a + bn$ represent arithmetic sequence.

Watch Video Solution

2. By multiplying each term by non zero constant we get geometric sequence .

Watch Video Solution

3. $A_1, A_2, A_3 \ldots\ldots\ldots . A_n$ are arithmetic mean between two number a and b then a $A_1, A_2, \ldots\ldots\ldots\ldots An$, b becomes arithmetic sequence.

Watch Video Solution

4. If $\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$ is the A.M. between a and b, then find the value of n.

Watch Video Solution

5. First term a and common ratio r = 1 then sum of n terms on G.P. is $S_n = na$.

Watch Video Solution

6. Third term and sixth term of geometric sequence is 24 and 192 respectively then r = 34.

Watch Video Solution

7. A person has 2 parents, 4 grandparents, 8 great grandparents, and so on.Find the number of his ancestors during the ten generations preceding his own.

Watch Video Solution

8. a and b are non zero real numbers and $n \in N$ then $a_n = a + bn$ represent arithmetic sequence.

Watch Video Solution

9. By multiplying each term by non zero constant we get geometric sequence .

Watch Video Solution

10. $A_1, A_2, A_3 \ldots\ldots\ldots . A_n$ are arithmetic mean between two number a and b then a $A_1, A_2, \ldots\ldots\ldots\ldots An$, b becomes arithmetic sequence.

Watch Video Solution

11. Find the value of n so that $\frac{a^{n+1}+b^{n+1}}{a^n+b^n}$ may be the geometric mean between a and b.

Watch Video Solution

12. First term a and common ratio r = 1 then sum of n terms on G.P. is $S_n = na$.

Watch Video Solution

13. Third term and sixth term of geometric sequence is 24 and 192 respectively then r = 34.

Watch Video Solution

14. A person has 2 parents, 4 grandparents, 8 great grandparents, and so on.Find the number of his ancestors during the ten generations preceding his own.

Watch Video Solution

Straight Lines Fill In The Blanks

1. Find the slope of the lines :

Passing through the points $(3, -2)$ and $(-1, 4)$

Watch Video Solution

Watch Video Solution

2. Find the angle between the X-axis and the line joining the points $(3, -1)$ and $(4, -2)$.

Watch Video Solution

3. Find x if the slope of the line passes from points $A(x, 2)$ and $B(6, -8)$ is $-\frac{5}{4}$.

Watch Video Solution

4. Obtain the equation of the line which satisfying given condition :

(1) Passes from points $A(-1, 8)$ and $B(4, -2)$.

Watch Video Solution

5. $P - \alpha$ form of the line $x + \sqrt{3}y - 4 = 0$ is.....

Watch Video Solution

6. If $a+b+c=0$ then line $3ax+by+c=0$ passes from .....of the following point.

Watch Video Solution

7. If the points $A(k,\,2k)B(2k,\,3k)C(3,\,1)$ are collinear then k = ...

Watch Video Solution

8. A(6,4) and B(2,12) are given points . Then slope of line perpendicular to $\overleftrightarrow{AB}$ is .....

Watch Video Solution

9. By shifting origin at ..... Point the co - ordinates of (7,2) becomes (-1,3).

Watch Video Solution

10. If $(a+1)x+\left(a^2-a-2\right)y+a=0$ line is parallel to X - axis then a = ...

Watch Video Solution

11. If line $(a+4)x+\left(a^2-9\right)y+(a-4)=0$ passes from origin then a = ...

Watch Video Solution

12. Find k if lines $5x-ky-7=0$ and $2x+3y+5=0$ are mutually perpendicular.

Watch Video Solution

13. Angle between the lines x + y = 0 and y = 5 is .....

Watch Video Solution

14. If the lines $5x - ky + 3 = 0$ and $4x - 3y - 4 = 0$ are parallel then k = ...

Watch Video Solution

15. Equation of line passes from (2,-3) and makes an angle $\frac{\pi}{4}$ with X - axis is .....

Watch Video Solution

16. Perpendicular distance from $(-3, -4)$ to the line $12x - 5y + 81 = 0$ is .....

Watch Video Solution

17. Perpendicular distance between $3x + 4y - 5 = 0$ and $6x + 8y - 15 = 0$ is .....

Watch Video Solution

18. ..... is the equation of lines passes from (2,4) and makes equal intercept an axis.

Watch Video Solution

19. ..... is the transform form of equation $x^2 - y^2 - 2x + 2y = 0$ by shifting origin at (1,1)

Watch Video Solution

20. ..... is the equation of line which makes an angle $\frac{\pi}{3}$ with X - axis having y- intersept 3.

Watch Video Solution

21. Find the slope of the lines :

Passing through the points $(3, -2)$ and $(-1, 4)$

Watch Video Solution

22. Find the angle between the X-axis and the line joining the points $(3, -1)$ and $(4, -2)$.

Watch Video Solution

23. Find x if the slope of the line passes from points $A(x, 2)$ and $B(6, -8)$ is $-\frac{5}{4}$.

Watch Video Solution

24. Obtain the equation of the line which satisfying given condition :

(1) Passes from points $A(-1, 8)$ and $B(4, -2)$.

Watch Video Solution

25. .....is the value of ω to represent line $\sqrt{3}x + y = 10$ in normal form.

Watch Video Solution

26. If $a + b + c = 0$ then line $3ax + by + c = 0$ passes from .....of the following point.

Watch Video Solution

27. If the points $A(k, 2k)B(2k, 3k)C(3, 1)$ are collinear then k = ...

Watch Video Solution

28. A(6,4) and B(2,12) are given points . Then slope of line perpendicular to $\overleftrightarrow{AB}$ is .....

Watch Video Solution

29. By shifting origin at ..... Point the co - ordinates of (7,2) becomes (-1,3).

Watch Video Solution

30. If $(a+1)x+\left(a^2-a-2\right)y+a=0$ line is parallel to X - axis then a = ...

Watch Video Solution

31. If line $(a+4)x+\left(a^2-9\right)y+(a-4)=0$ passes from origin then a = ...

Watch Video Solution

32. Find k if lines $5x-ky-7=0$ and $2x+3y+5=0$ are mutually perpendicular.

Watch Video Solution

33. Angle between the lines x + y = 0 and y = 5 is .....

Watch Video Solution

34. If the lines $5x - ky + 3 = 0$ and $4x - 3y - 4 = 0$ are parallel then k = ...

Watch Video Solution

35. Equation of line passes from (2,-3) and makes an angle $\frac{\pi}{4}$ with X - axis is .....

Watch Video Solution

36. Perpendicular distance from $(-3, -4)$ to the line $12x - 5y + 81 = 0$ is .....

Watch Video Solution

37. If perpendicular distance between lines $3x + 4y + 10 = 0$ and $6x + 8y + k = 0$ is $\frac{7}{2}$ unit then k = ...

Watch Video Solution

38. ..... is the equation of lines passes from (2,4) and makes equal intercept an axis.

Watch Video Solution

39. ..... is the transform form of equation $x^2 - y^2 - 2x + 2y = 0$ by shifting origin at (1,1)

Watch Video Solution

40. ..... is the equation of line which makes an angle $\frac{\pi}{3}$ with X - axis having y- intersept 3.

Watch Video Solution

Straight Lines True False Statement

1. Slope of line is non zero real number .

Watch Video Solution

2. Slope of line passes from point A(3,-2) and B(3,-7) is zero .

Watch Video Solution

3. $P-\alpha$ form of the line $x+\sqrt{3}y-4=0$ is.....

Watch Video Solution

4. Equation of line passes from $A\left(-\frac{3}{2}, \frac{5}{2}\right)$ and parallel to Y - axis is 2x - 5 = 0 .

Watch Video Solution

5. Origin is shifted at (1,6) and new co - ordinate of point A is (1,3) then old co - ordinates are (2,9) .

Watch Video Solution

6. x intercept of line 4x + 3y - 12 is 3.

Watch Video Solution

7. Slope of line passes from (3,k) and (2,7) is 2 then k = 7.

Watch Video Solution

8. Length of perpendicular from origin to the line $l: x - \sqrt{3}y + 4 = 0$ is 4 unit.

Watch Video Solution

9. Slope of line is non zero real number .

Watch Video Solution

10. Slope of line passes from point A(3,-2) and B(3,-7) is zero .

Watch Video Solution

11. $P - \alpha$ form of the line $x + \sqrt{3}y - 4 = 0$ is.....

Watch Video Solution

12. Equation of line passes from $A\left(-\frac{3}{2}, \frac{5}{2}\right)$ and parallel to Y - axis is $2x - 5 = 0$.

Watch Video Solution

13. Origin is shifted at (1,6) and new co - ordinate of point A is (1,3) then old co - ordinates are (2,9) .

Watch Video Solution

14. x intercept of line $4x + 3y - 12$ is 3.

Watch Video Solution

15. Slope of line passes from (3,k) and (2,7) is 2 then $k = 7$.

Watch Video Solution

16. Length of perpendicular from origin to the line $l: x - \sqrt{3}y + 4 = 0$ is 4 unit.

Watch Video Solution

Conic Sections Fill In The Blanks

1. Radius of circle with centre C(3,4) and passes from O(0,0) is r = ...

Watch Video Solution

2. $\overline{AB}$ is diameter of circle with centre (4,2) . If point A is (-3,2) . Then second end point is .....

Watch Video Solution

3. Area of circle with centre (1,2) and passes from (4,6) is .....

Watch Video Solution

4. Coordinates of centre of circle passes from (0,0) , (a,0) and (0,b) is .....

Watch Video Solution

5. .....is the standard equation of circle with centre (1,0) and its circumterence is 10π.

Watch Video Solution

6. $\overline{AB}$ joining A(1,k) and B(3,5) is diameter of circle with centre C(h,3) then h and k = ...

Watch Video Solution

7. Radius of circle which touches X - axis at (3,0) and cuts a chord at length 8 unit on Y - axis is .....

Watch Video Solution

8. Minimum distance of the line $3x + 4y - 50 = 0$ from the point lies on circle $x^2 + y^2 = 25$ is .....

A. 2

B. 5

C. 1

D. 4

Answer: B

Watch Video Solution

9. length of latus rectum of parabola $y^2 = 4ax$ which passes from (3,2) is ..... .

Watch Video Solution

10. L and L' are end points of latus rectum of parabola $y^2 = 4ax$ and M' and M are foot of perpendiculars from there points to line x = 0 then are of LL'M'M = ...

Watch Video Solution

11. Vertex of parabola $(y-3)^2 = 2(x+1)$ is .....

Watch Video Solution

12. (5,2) and (3,4) are end points of latus rectums then its focii is ..... .

Watch Video Solution

13. Eccentricity of ellipse is .....if length of latus rectum is half then minor axis.

Watch Video Solution

14. Eccentricity e of ellipse is .....if length of minor axis is distance between its focii.

Watch Video Solution

15. Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the latus rectum of the ellipse $\frac{x^2}{25}+\frac{y^2}{9}=1$

Watch Video Solution

16. Length of latus rectum of ellipse $4x^2 + 9y^2 = 1$ is ..... .

Watch Video Solution

17. Length of major axis of ellipse $25x^2 + 9y^2 = 1$ is ..... .

Watch Video Solution

18. Focii of hyperbola $9x^2 - 16y^2 = 144$ is .....

Watch Video Solution

19. Find the corrdinates of the foci and the vertices, the eccentricity, the length of the latus rectum of the hyperbolas :

(i) $\frac{x^2}{9} - \frac{y^2}{16} = 1$ (ii) $y^2 - 16x^2 = 16$

Watch Video Solution

20. Eccentricity of hyperbola $16y^2 - 9x^2 = 144$ is .....

Watch Video Solution

21. Eccentricity of $x^2 - 4y^2 = 1$ is .....

Watch Video Solution

22. Length of latus rectum of ellipse $5x^2 + 9y^2 = 25$ is ..... .

Watch Video Solution

23. ..... is the eccentricity of ellipse if distance between focii is 6 unit and length of minor axis is 8 unit .

Watch Video Solution

24. If the ratio of major and minor axis of ellipse is $5:3$ then eccentricity e = ...

Watch Video Solution

25. Length of the conjugate axis of $12x^2 - 3y^2 = -36$ is .....

Watch Video Solution

26. If the equation $(a-3)x^2 + 9y^2 = 4$ represents the rectangular hyperbola then a = ...

Watch Video Solution

27. Radius of circle with centre C(3,4) and passes from O(0,0) is r = ...

Watch Video Solution

28. $\overline{AB}$ is diameter of circle with centre (4,2) . If point A is (-3,2) . Then second end point is .....

Watch Video Solution

29. Area of circle with centre (1,2) and passes from (4,6) is .....

Watch Video Solution

30. Coordinates of centre of circle passes from (0,0) , (a,0) and (0,b) is .....

Watch Video Solution

31. .....is the standard equation of circle with centre (1,0) and its circumterence is 10π.

Watch Video Solution

32. $\overline{AB}$ joining A(1,k) and B(3,5) is diameter of circle with centre C(h,3) then h and k = ...

Watch Video Solution

33. Radius of circle which touches X - axis at (3,0) and cuts a chord at length 8 unit on Y - axis is .....

Watch Video Solution

34. Minimum distance of the line $3x + 4y - 50 = 0$ from the point lies on circle $x^2 + y^2 = 25$ is .....

A. 2

B. 5

C. 1

D. 4

Answer: B

Watch Video Solution

35. length of latus rectum of parabola $y^2 = 4ax$ which passes from (3,2) is ..... .

Watch Video Solution

36. L and L' are end points of latus rectum of parabola $y^2 = 4ax$ and M' and M are foot of perpendiculars from there points to line x = 0 then are of LL'M'M = ...

Watch Video Solution

37. Vertex of parabola $(y-3)^2 = 2(x+1)$ is .....

Watch Video Solution

38. (5,2) and (3,4) are end points of latus rectums then its focii is ..... .

Watch Video Solution

39. Eccentricity of ellipse is .....if length of latus rectum is half then minor axis.

Watch Video Solution

40. Eccentricity e of ellipse is .....if length of minor axis is distance between its focii.

Watch Video Solution

41. Eccentricity of ellipse $9x^2 + 25y^2 = 225$ is .....

Watch Video Solution

42. Length of latus rectum of ellipse $4x^2 + 9y^2 = 1$ is ..... .

Watch Video Solution

43. Length of major axis of ellipse $25x^2 + 9y^2 = 1$ is ..... .

Watch Video Solution

44. Focii of hyperbola $9x^2 - 16y^2 = 144$ is .....

Watch Video Solution

45. Length of latus rectum of hyperbola $16x^2 - 9y^2 = 144$ is ..... .

Watch Video Solution

46. Eccentricity of hyperbola $16y^2 - 9x^2 = 144$ is .....

Watch Video Solution

47. Eccentricity of $x^2 - 4y^2 = 1$ is .....

Watch Video Solution

48. Length of latus rectum of ellipse $5x^2 + 9y^2 = 25$ is ..... .

Watch Video Solution

49. ..... is the eccentricity of ellipse if distance between focii is 6 unit and length of minor axis is 8 unit .

Watch Video Solution

50. If the ratio of major and minor axis of ellipse is $5:3$ then eccentricity e = ...

Watch Video Solution

51. Length of the conjugate axis of $12x^2 - 3y^2 = -36$ is .....

Watch Video Solution

52. If the equation $(a-3)x^2 + 9y^2 = 4$ represents the rectangular hyperbola then a = ...

Watch Video Solution

Conic Sections True False Statement

1. Radius of the circle touches X - axis = |x co - ordinate of centre |.

Watch Video Solution

2. Radius of the circle $x^2 + y^2 + 8x + 10y = 8$ is 7 unit.

Watch Video Solution

3. Eccentricity of curve given equation $y^2 = 9x$ is 1.

Watch Video Solution

4. Equation of directrix of parabola $2y^2 = x$ is 8x + 1 = 0

Watch Video Solution

5. Semi vertical angle of cone is α . Plane intersects vertical axis at an angle β . If $\alpha = \beta$ then cross section of cone is parabola.

Watch Video Solution

6. Ellipse $\frac{x^2}{25} + \frac{y^2}{9} = 1$ is symmetric about Y - axis.

Watch Video Solution

7. (5,10) and (5,-10) are end points of latus rectum of parabola $y^2 = 20x$.

Watch Video Solution

8. $t \in R$ parametric equation of parabola are $x = at^2$ and $y = 2at$.

Watch Video Solution

9. Length of latus rectum of ellipse is $\frac{x^2}{b^2} + \frac{y^2}{a^2}$ = ... 1 is $\frac{2a^2}{|b|}$.

Watch Video Solution

10. Equation x = 4 $\cos\theta$ and $y = 3\sin\theta, \theta \in (-\pi, \pi)$ denotes ellipse .

Watch Video Solution

11. Curve having eccentricity $\sqrt{2}$ is a rectangular hyperbola.

Watch Video Solution

12. Radius of the circle touches X - axis = |x co - ordinate of centre |.

Watch Video Solution

13. Radius of the circle $x^2 + y^2 + 8x + 10y = 8$ is 7 unit.

Watch Video Solution

14. Eccentricity of curve given equation $y^2 = 9x$ is 1.

Watch Video Solution

15. Equation of directrix of parabola $2y^2 = x$ is 8x + 1 = 0

Watch Video Solution

16. Semi vertical angle of cone is α . Plane intersects vertical axis at an angle β . If $\alpha = \beta$ then cross section of cone is parabola.

Watch Video Solution

17. Ellipse $\frac{x^2}{25} + \frac{y^2}{9} = 1$ is symmetric about Y - axis.

Watch Video Solution

18. (5,10) and (5,-10) are end points of latus rectum of parabola $y^2 = 20x$.

Watch Video Solution

19. $t \in R$ parametric equation of parabola are $x = at^2$ and $y = 2at$.

Watch Video Solution

20. Length of latus rectum of ellipse is $\frac{x^2}{b^2} + \frac{y^2}{a^2}$ = ... 1 is $\frac{2a^2}{|b|}$.

Watch Video Solution

21. Equation x = 4 $\cos\theta$ and $y = 3\sin\theta, \theta \in (-\pi, \pi)$ denotes ellipse .

Watch Video Solution

22. Curve having eccentricity $\sqrt{2}$ is a rectangular hyperbola.

Watch Video Solution

Introduction To Three Dimensional Geometry Fill In The Blanks

1. Find the octant in which the point (-3, 1, 2) and (-3, 1, -2) lie.

Watch Video Solution

2. y co - ordinate of the point lies on X - axis is .....

Watch Video Solution

3. If P (1,-3,4) and Q (-4,1,2) are given then d(PQ) = unit.

Watch Video Solution

4. Find the coordinates of the point which divides the line segment joining the points (1, -2, 3) and (3, 4, -5) in the ratio 2 : 3 (i) internally, and (ii) externally.

Watch Video Solution

5. The coordinates of points in the XY-plane are of the form _____

Watch Video Solution

6. Centroid of the triangle with verticies P(1, -2, 1), Q(2, 3, -1) and R(1, -1, -1) is _____ .

Watch Video Solution

7. The centroid of the triangle with verticies A(1, 1, 1), B(2, 1, 2) and C(x, y, z) is O(0, 0, 0) then (x, y, z) = _____ .

Watch Video Solution

8. In R^3 equation $x^2 + y^2 = 0$ represents ___ .

Watch Video Solution

9. L is the foot of the perpendicular drawn from a point (3, 4, 5) on X-axis. The coordinates of L are ____ .

Watch Video Solution

10. If the distance between the points (a, 0, 1) and (0, 1, 2) is $\sqrt{27}$, then the value of a is _____ .

Watch Video Solution

11. Perpendicular distance from origin to point (3,4,5) is ..... .

Watch Video Solution

12. Find the co-ordinates of a point on Y-axis which are at a distance of $5\sqrt{2}$ from the point P(3, -2, 5).

Watch Video Solution

13. Point (-3,1,-2) is in ..... octant.

Watch Video Solution

14. y co - ordinate of the point lies on X - axis is .....

Watch Video Solution

15. If P (1,-3,4) and Q (-4,1,2) are given then d(PQ) = unit.

Watch Video Solution

16. Find the coordinates of the point which divides the line segment joining the points (1, -2, 3) and (3, 4, -5) in the ratio 2 : 3 (i) internally, and (ii) externally.

Watch Video Solution

17. The coordinates of points in the XY-plane are of the form _____

Watch Video Solution

18. Centroid of the triangle with verticies P(1, -2, 1), Q(2, 3, -1) and R(1, -1, -1) is _____ .

Watch Video Solution

19. The centroid of the triangle with verticies A(1, 1, 1), B(2, 1, 2) and C(x, y, z) is O(0, 0, 0) then (x, y, z) = _____ .

Watch Video Solution

20. In R^3 equation $x^2 + y^2 = 0$ represents ____ .

Watch Video Solution

21. L is the foot of the perpendicular drawn from a point (3, 4, 5) on X-axis. The coordinates of L are ____ .

Watch Video Solution

22. If the distance between the points (a, 0, 1) and (0, 1, 2) is $\sqrt{27}$, then the value of a is _____ .

Watch Video Solution

23. Perpendicular distance from origin to point (3,4,5) is ..... .

Watch Video Solution

24. Find the co-ordinates of a point on Y-axis which are at a distance of $5\sqrt{2}$ from the point P(3, -2, 5).

Watch Video Solution

Introduction To Three Dimensional Geometry True False Statement

1. X and Z - axis together makes Y plane.

Watch Video Solution

2. Co - ordinates of the point in YZ plane are in the form of (a,y,z) where $a \in R - \{0\}$.

Watch Video Solution

3. The perpendicular distance of point P(x,y,z) from XY plane is (x+y).

Watch Video Solution

4. Point (-4,2,-5) lies in third octant.

Watch Video Solution

5. The three coordinate planes divide the space into ___ parts.

Watch Video Solution

6. XOY'Z represents third octant.

Watch Video Solution

7. If point P divided line segment joining points $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$ in ratio k : 1 then co - ordinates on P.

Watch Video Solution

8. Find the ratio in which the line segment joining the points (4, 8, 10) and (6, 10, -8) is divided by the YZ-plane.

Watch Video Solution

9. X and Z - axis together makes Y plane.

Watch Video Solution

10. Co - ordinates of the point in YZ plane are in the form of (a,y,z) where $a \in R - \{0\}$.

Watch Video Solution

11. The perpendicular distance of point P(x,y,z) from XY plane is (x+y).

Watch Video Solution

12. Point (-4,2,-5) lies in third octant.

Watch Video Solution

13. The three coordinate planes divide the space into ____ parts.

Watch Video Solution

14. XOY'Z represents third octant.

Watch Video Solution

15. If point P divided line segment joining points $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$ in ratio k : 1 then co - ordinates on P.

Watch Video Solution

16. YZ plane divides line segment joining (4,8,10) and (6,10,-8) in ratio $-2:3$.

Watch Video Solution

Limits And Derivatives Fill In The Blanks

1. $\lim_{x \to -1} \{x + x^2 + x^3 + \ldots\ldots\ldots + x^{10}\}$ = ...

Watch Video Solution

2. A $r \to 2$ then area of circle with radius r = ...

Watch Video Solution

3. $\lim_{x \to 0} \frac{ax^3 + bx^2 + cx + d}{(a+1)x + b}$ = ...

Watch Video Solution

4. $\lim_{x \to \pi} \frac{\sin x}{\pi - x}$ = ...

Watch Video Solution

5. $\lim_{x \to 0} \frac{\sin x - 2\sin(3x) + \sin(5x)}{x}$ = ...

Watch Video Solution

6. $\lim_{x \to -1} \frac{x^7 + 1}{x^8 - 1}$ = ...

Watch Video Solution

7. $\lim_{x \to 0} \frac{\sin(x^\circ)}{x}$ = ...

Watch Video Solution

8. If f(3)=2 then $\lim_{x \to 2} f\left(x^2 - 1\right)$ = ...

Watch Video Solution

9. $\lim_{x \to 0} \frac{\sin\left(\pi \cos^2 x\right)}{x^2}$ = ...

Watch Video Solution

10. $\lim_{x \to 1} \frac{x + x^2 + x^3 + \ldots + x^{10} - 10}{x - 1}$

Watch Video Solution

11. $\lim_{x \to 0} \frac{e^{\sin x} - 1}{x}$

Watch Video Solution

12. Find the derivative of $f(x) = 1 + x + x^2 + x^3 + \ldots + x^{50}$ at $x = 1$.

Watch Video Solution

13. If $y = \left(\sqrt{x} + \frac{1}{\sqrt{x}}\right) \cdot \left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)$ then $\frac{dy}{dx}$ = ...

Watch Video Solution

Watch Video Solution

14. If $y = \frac{1 - \cos^2 x}{\sin^2 x}$ then $\frac{dy}{dx}$ = ...

Watch Video Solution

15. If $y = \frac{x}{a} + \frac{a}{x}$ then $\frac{dy}{dx}$ = ...

Watch Video Solution

16. If f(x)=x sin x then $f'\left(\frac{\pi}{2}\right)$ = ...

Watch Video Solution

17. $f(x) = x^3 + 3x^2 + 3x + 1$ then f'(x) = ...

Watch Video Solution

18. If $y = x - |x|$ then $\frac{dy}{dx}$..... . , $x < 0$

Watch Video Solution

19. If f(x) = $ax^2 + bx + 12, f'(2) = 11$ and $f'(4) = 15$ then possible value of a and b are ..... .

Watch Video Solution

20. $\lim_{x \to -1} \{x + x^2 + x^3 + ... + x^{10}\}$ = ...

Watch Video Solution

21. A $r \to 2$ then area of circle with radius r = ...

Watch Video Solution

22. $\lim_{x \to 0} \frac{ax^3 + bx^2 + cx + d}{(a+1)x + b}$ = ...

Watch Video Solution

23. $\lim_{x \to \pi} \frac{\sin x}{\pi - x}$ = ...

Watch Video Solution

24. $\lim_{x \to 0} \frac{\sin x - 2\sin(3x) + \sin(5x)}{x}$ = ...

Watch Video Solution

25. $\lim_{x \to -1} \frac{x^7 + 1}{x^8 - 1}$ = ...

Watch Video Solution

26. $\lim_{x \to 0} \frac{\sin(x^\circ)}{x}$ = ...

Watch Video Solution

27. If f(3)=2 then $\lim_{x \to 2} f\left(x^2 - 1\right)$ = ...

Watch Video Solution

28. $\lim_{x \to 0} \frac{\sin\left(\pi \cos^2 x\right)}{x^2}$ = ...

Watch Video Solution

29. $\lim_{x \to 1} \frac{x + x^2 + x^3 + \ldots + x^{10} - 10}{x - 1}$

Watch Video Solution

30. $\lim_{x \to 0} \frac{e^{\sin x} - 1}{x}$

Watch Video Solution

31. Find the derivative of $f(x) = 1 + x + x^2 + x^3 + \ldots + x^{50}$ at $x = 1$.

Watch Video Solution

32. If $y = \left(\sqrt{x} + \frac{1}{\sqrt{x}}\right).\left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)$ then $\frac{dy}{dx}$ = ...

Watch Video Solution

33. If $y = \frac{1 - \cos^2 x}{\sin^2 x}$ then $\frac{dy}{dx}$ = ...

Watch Video Solution

34. If $y = \frac{x}{a} + \frac{a}{x}$ then $\frac{dy}{dx}$ = ...

Watch Video Solution

35. If f(x)=x sin x then $f'\left(\frac{\pi}{2}\right)$ = ...

Watch Video Solution

36. $f(x) = x^3 + 3x^2 + 3x + 1$ then f'(x) = ...

Watch Video Solution

37. If $y = x - |x|$ then $\frac{dy}{dx}$..... . , $x < 0$

Watch Video Solution

38. If f(x) = $ax^2 + bx + 12, f'(2) = 11$ and $f'(4) = 15$ then possible value of a and b are ..... .

Watch Video Solution

Limits And Derivatives True False Statement

1. $\lim_{x \to 0} \frac{1 - \cos(2x)}{x^2} = 0.$

Watch Video Solution

2. If $f(x) = x - [x]$ then $\lim_{x \to 4.5}$ f(x)=4.

Watch Video Solution

3. $\lim_{x \to 0+} \frac{|x|}{x}$

Watch Video Solution

4. $\lim_{x \to 0} \frac{(e)^{e^x}}{e^x + 1} = 2e$

Watch Video Solution

5. Derivative of f(x) = sin x at point x = 0 is 1.

Watch Video Solution

6. If $f(x) - g(x)$ is constant then f'(x) = g'(x)

Watch Video Solution

7. If $\frac{d}{dx}(f(x))^n = n(f(x))^{n-1}\frac{df(x)}{dx}$ then $\frac{d}{dx}\left(\sin^3 x\right) = 3\sin^2 x.\cos x.$

Watch Video Solution

8. If $\frac{d}{dx}(x + |x|).|x| = 4x$ where $x > 0$

Watch Video Solution

9. $\lim_{x \to a} \frac{xf(a) - af(x)}{x - a} = f(a) - (a)f'(a).$

Watch Video Solution

10. $\frac{d}{dx}\left(a^{\log_a \sqrt{x}}\right) = \frac{1}{2\sqrt{x}}$ where $a > 1 \in R^+$

Watch Video Solution

11. $\lim_{x \to 0} \frac{1 - \cos(2x)}{x^2}$ = 0.

Watch Video Solution

12. If $f(x) = x - [x]$ then $\lim_{x \to 4.5}$ f(x)=4.

Watch Video Solution

13. $\lim_{x \to 0+} \frac{|x|}{x}$

Watch Video Solution

14. $\lim_{x \to 0} \frac{(e)^{e^x}}{e^x + 1} = 2e$

Watch Video Solution

15. Derivative of f(x) = sin x at point x = 0 is 1.

Watch Video Solution

16. If $f(x) - g(x)$ is constant then f'(x) = g'(x)

Watch Video Solution

17. If $\frac{d}{dx}(f(x))^n = n(f(x))^{n-1}\frac{df(x)}{dx}$ then $\frac{d}{dx}(\sin^3 x) = 3\sin^2 x.\cos x.$

Watch Video Solution

18. If $\frac{d}{dx}(x+|x|).|x| = 4x$ where $x > 0$

Watch Video Solution

19. $\lim_{x \to a} \frac{xf(a) - af(x)}{x - a} = f(a) - (a)f'(a).$

Watch Video Solution

20. $\frac{d}{dx}\left(a^{\log_a \sqrt{x}}\right) = \frac{1}{2\sqrt{x}}$ where $a > 1 \in R^+$

Watch Video Solution

Mathematical Reasoning Fill In The Blanks

1. The negation of the statement "3 is odd or 3 is prime" is ..... .

Watch Video Solution

2. The contrapositive of "if x > y then 3x > 3y" is .... .

Watch Video Solution

3. Converse of $p \Rightarrow q$ is ..... .

Watch Video Solution

4. The contrapositive of $p \Rightarrow q$ is .....

Watch Video Solution

5. $\sim(p \text{ and } q) = \ldots\ldots\ldots\ldots\ldots$

Watch Video Solution

6. $p \vee q$ is false if....

Watch Video Solution

7. If Negation of p then q has symbolic from

Watch Video Solution

8. $\sim[p \text{ or } (\sim q)]$ = ...

Watch Video Solution

9. The symbolic from of negation p or q is . .... .

Watch Video Solution

10. p and q are given statements then contra positive of $p \vee \sim(p \Rightarrow \sim q)$ is ..... .

View Text Solution

11. $\sim p \Rightarrow \sim q$ is false when.....

Watch Video Solution

12. .....of the following is logically equivalent statement of $\sim(\sim p \Rightarrow q)$

Watch Video Solution

13. contrapositive of $(p \vee q) \Rightarrow r$

Watch Video Solution

14. It is not true that 'Ram is claver OR Ram is bold. Then logical from of these statement is ..... .

Watch Video Solution

15. The negation of the statement "3 is odd or 3 is prime" is ..... .

Watch Video Solution

16. The contrapositive of "if x > y then 3x > 3y" is .... .

Watch Video Solution

17. Converse of $p \Rightarrow q$ is ..... .

Watch Video Solution

18. The contrapositive of $p \Rightarrow q$ is .....

Watch Video Solution

19. $\sim(p \text{ and } q) = \ldots\ldots\ldots\ldots\ldots$

Watch Video Solution

20. $p \vee q$ is false if....

Watch Video Solution

21. If Negation of p then q has symbolic from

Watch Video Solution

22. $\sim[p \text{ or } (\sim q)]$ = ...

Watch Video Solution

23. The symbolic from of negation p or q is . .... .

Watch Video Solution

24. p and q are given statements then contra positive of $p \vee \sim(p \Rightarrow \sim q)$ is ..... .

View Text Solution

25. $\sim p \Rightarrow \sim q$ is false when.....

Watch Video Solution

26. $\sim(\sim p \Rightarrow q)$ has ..... expression logically equal .

Watch Video Solution

27. contrapositive of $(p \vee q) \Rightarrow r$

Watch Video Solution

28. It is not true that 'Ram is claver OR Ram is bold. Then logical from of these statement is ..... .

Watch Video Solution

Mathematical Reasoning True False Statement

1. Please go out side is statement .

Watch Video Solution

2. In following statement 'OR' is used in inclusive sense. "Roses are yellow or pink "

Watch Video Solution

3. There exists some positive integer x such that $\sqrt{x} \in R$.

Watch Video Solution

4. If n is odd then n^2 is odd ' compound statement is false .

Watch Video Solution

5. If 'p then q' has its converse 'q then p'.

Watch Video Solution

6. Logical from of p and negation q is $p \vee (\sim q)$.

Watch Video Solution

7. Please go out side is statement .

Watch Video Solution

8. In following statement 'OR' is used in inclusive sense. "Roses are yellow or pink "

Watch Video Solution

9. There exists some positive integer x such that $\sqrt{x} \in R$.

Watch Video Solution

10. If n is odd then n^2 is odd ' compound statement is false .

Watch Video Solution

11. If 'p then q' has its converse 'q then p'.

Watch Video Solution

12. Logical from of p and negation q is $p \vee (\sim q)$.

Watch Video Solution

Statistics Fill In The Blanks

1. Median of nine observations is 20.45 . If 2 is added in last four observations, then new median is

Watch Video Solution

2. Suppose in group A, 100 observations are 101 , ... 200 and in group B has observations 151,152, ...250. If V_A and V_B are variance of there groups respectively then $\frac{V_A}{V_B}$ = ...

Watch Video Solution

3. If the standard deviation of variable x is 4 and $y = \frac{3x + 7}{4}$ then the standard deviation of variable y is

Watch Video Solution

4. The variance of observations 3,4,5,8 is

Watch Video Solution

5. The mean of 100 observations is 50 and their standard deviation is 5. The sum of all squares of all the observations is .....

Watch Video Solution

6. Let a,b,c,d,e be the observations with mean m and standard deviation S. The standard deviation of the observation a + k , b+ k , c+ k, d+k, e+k is .....

Watch Video Solution

7. S.D. of the observation $x_1, x_2, x_3 \ldots . x_n$ is 3.5 then S.D. of $-2x_1 - 3, -2x_2 - 3, \ldots\ldots\ldots -2x_n - 3$ is .....

Watch Video Solution

8. Median of the data 9,15,20,22,8,17,10,18,14,25 is .....

Watch Video Solution

9. Find x if the median of the observation 33,28,20,25,34 and x is 29.

Watch Video Solution

10. Median of nine observations is 20.45 . If 2 is added in last four observations, then new median is

Watch Video Solution

11. Suppose in group A, 100 observations are 101 , ... 200 and in group B has observations 151,152, ...250. If V_A and V_B are variance of there groups respectively then $\frac{V_A}{V_B}$ = ...

Watch Video Solution

12. If the standard deviation of variable x is 4 and $y = \frac{3x + 7}{4}$ then the standard deviation of variable y is

Watch Video Solution

13. The variance of observations 3,4,5,8 is

Watch Video Solution

14. The mean of 100 observations is 50 and their standard deviation is 5. The sum of all squares of all the observations is .....

Watch Video Solution

15. Let a,b,c,d,e be the observations with mean m and standard deviation S. The standard deviation of the observation a + k , b+ k , c+ k, d+k, e+k is .....

Watch Video Solution

16. S.D. of the observation $x_1, x_2, x_3 \ldots . x_n$ is 3.5 then S.D. of $-2x_1 - 3, -2x_2 - 3, \ldots\ldots\ldots -2x_n - 3$ is .....

Watch Video Solution

17. Median of the data 9,15,20,22,8,17,10,18,14,25 is .....

Watch Video Solution

18. Find x if the median of the observation 33,28,20,25,34 and x is 29.

Watch Video Solution

Statistics True False Statement

1. Marks obtained by 10 students in exam of 70 Marks are as follows. 53,46,48,50,53,53,58,60,57 and 52 Then range of data is .....

Watch Video Solution

2. Numbers of observation of the data is n (where n is even) then median will be average of $\left(\frac{n}{2}\right)^{th}$ and $\left(\frac{n}{2}+1\right)^{th}$ observation.

Watch Video Solution

3. Median of nine observations is 20.45 . If 2 is added in last four observations, then new median is

Watch Video Solution

4. Let a,b,c,d,e be the observations with mean m and standard deviation S. The standard deviation of the observation a + k , b+ k , c+ k, d+k, e+k is .....

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5. Mean is the measure of dispersion.

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6. Co-efficient of variance of one data is 45% and mean is 12 then S.D. is 5.4

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7. $x_1, x_2, x_3, \ldots . x_n$ then $(x_1 - \bar{x}) + (x_2 - \bar{x}) + (x_n - \bar{x}) = 0.$

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8. For an data if n = 10, $\sum x_1 = 40, \sum x_i^2 = 250$ then standard deviation s = ...

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9. variance of 6 observation is 250 then $\sum (x_i - \bar{x})^2 = 1200.$

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10. a,b,c and d are 4 observations . Their mean and median is zero then b = -c.

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11. Marks obtained by 10 students in exam of 70 Marks are as follows. 53,46,48,50,53,53,58,60,57 and 52 Then range of data is .....

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12. Numbers of observation of the data is n (where n is even) then median will be average of $\left(\frac{n}{2}\right)^{th}$ and $\left(\frac{n}{2}+1\right)^{th}$ observation.

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13. Median of nine observations is 20.45 . If 2 is added in last four observations, then new median is

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14. Let a,b,c,d,e be the observations with mean m and standard deviation S. The standard deviation of the observation a + k , b+ k , c+ k, d+k, e+k is

.....

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15. Mean is the measure of dispersion.

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16. Co-efficient of variance of one data is 45% and mean is 12 then S.D. is 5.4

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17. $x_1, x_2, x_3, \ldots . x_n$ then $(x_1 - \bar{x}) + (x_2 - \bar{x}) + (x_n - \bar{x}) = 0.$

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18. For an data if n = 10, $\sum x_1 = 40, \sum x_i^2 = 250$ then standard deviation s = ...

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19. variance of 6 observation is 250 then $\sum (x_i - \bar{x})^2 = 1200.$

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20. a,b,c and d are 4 observations . Their mean and median is zero then b = -c.

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Probability Fill In The Blanks

1. A and B are mutually exclusive events. P(A)=0.38, then $P(A \cap B') = \ldots\ldots$

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2. A and B are mutually exclusive events and $P(A) = \frac{3}{5}, P(B) = \frac{1}{5}$ then P(A OR B) = ...

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3. A coin and dice are tossed . Then ..... Is the probability that coin shows head and dice shows number 6 .

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4. Suppose A,B,C mutually exclusive and exhaustive . If P(A) = 0.25 , P (B) = 0.63, P(c) = 0.20 then P is ..... .

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

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6. One number is selected from first 120 natural number .then probability of an event that selected number is multiple of 5 or 15 is .... .

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7. Event G and C denotes that student is intelligent and fond of chocolate . If P(G) = 0.6 ,P(C) = 0.7 , $P(G \cap C) = 0.4,$ then $P(G' \cap C')$ = ...

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8. Two dice are thrown together. The probability that the sum of the numbers obtained on both the dice is prime is ....

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9. What is the probability that in a leap year chosen at random will contain 53 Sunday?

Watch Video Solution

10. A, B and C are mutually exclusive and exhaustive events. If $\frac{1}{3}P(C) = \frac{1}{2}P(A) = P(B)$, then p(B) = ...

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11. In a relay race there are five teams A, B, C, D and E.

(a) What is the probability that A, B and C finish first, second and third,

respectively.

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12. A card is drawn at random from pack of 52 playing cards. Find the probability of getting (i) a face card (ii) red card.

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13. If P(A) = 0.68 and A and B are mutually exclusive events then $P(A \cap B')$ = ...

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14. A and B are mutually exclusive events and $P(A) = \frac{3}{5}, P(B) = \frac{1}{5}$ then P(A OR B) = ...

Watch Video Solution

15. A coin and dice are tossed . Then ..... Is the probability that coin shows head and dice shows number 6 .

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Watch Video Solution

20. Two dice are thrown together. The probability that the sum of the numbers obtained on both the dice is prime is ....

Watch Video Solution

21. What is the probability that in a leap year chosen at random will contain 53 Sunday?

Watch Video Solution

22. A, B and C are mutually exclusive and exhaustive events. If $\frac{1}{3}P(C) = \frac{1}{2}P(A) = P(B)$, then p(B) = ...

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23. In a relay race there are five teams A, B, C, D and E.

(a) What is the probability that A, B and C finish first, second and third, respectively.

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24. You have a single deck of well shuffled cards. Then,

What is the probability that it is a face card?

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Probability True False Statement

1. If the sample space has $n \in N$ different elements then it has exactly $n \in N$ primary events .

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2. Primary events are mutually exclusive.

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3. Probability of impossible events is zero.

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4. If A is any event of sample space S then $P(A) \in [0, 1]$.

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5. Sum of integer obtain on two dice have sum 14 is impossible event.

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6. If the sample space has $n \in N$ different elements then it has exactly $n \in N$ primary events .

View Text Solution

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