

Question

1 :- Integrate $\sin(2x + 1)$ with respect x

CORRECT ANSWER = $-\frac{1}{2} \cos(2x+1) + C$

2 :- From the diagram above, determine the distance between the points P and Q

CORRECT ANSWER = $D = \sqrt{34}$ UNITS

3 :- If $A = [1, 2, 1, -1, 0, 4, 0, 1, 3]$, evaluate $|A|$

CORRECT ANSWER = 1

4 :- Find interior angles of a regular polygon having 10 sides

CORRECT ANSWER = 144 DEGREE

5 :- The letters in the word INTERNATIONAL are cut out and put into a basket. A letter is chosen at random What is the probability that it is N or A or I or T

CORRECT ANSWER = $\frac{8}{13}$

6 :- Convert 11101 base 3 to base 10

CORRECT ANSWER = 118

7 :- Evaluate without using tables $\tan 60^\circ \tan 30^\circ / \tan 45^\circ$

CORRECT ANSWER = 1

8 :- From the above figure, the equation of the locus is

CORRECT ANSWER = $X^2 = Y^2 = 36$

9 :- Given that energy E varies directly as resistance R and inversely as square of distance d , obtain an equation connecting E, R and d

CORRECT ANSWER = $E = \frac{KR}{D^2}$

10 :- Find the solution sets of the inequality $x^2 - x - 6 < 0$

CORRECT ANSWER = $-2 < x < 3$

11 :- If $M = \{\text{all perfect squares less than } 40\}$ and $N = \{\text{all odd numbers from } 1 \text{ to } 10\}$, Find $M \cap N$

CORRECT ANSWER = $\{1, 9\}$

12 :- Given that $P = \{x \in \mathbb{Z} \mid -3 < x < \text{or} = 10\}$ and $Q = \{x \in \mathbb{Z} \mid -5 < \text{or} = x < 6\}$, find $P \cap Q$

CORRECT ANSWER = $6 < \text{or} = x < \text{or} = 10$

13 :- The mean of $3 + 2y, -y, 2y - 1, y + 1$ and $y + 1$ and $y + 2$ is

CORRECT ANSWER = $1 + y$

14 :- Find the total number of possible arrangement of the letters of the word DOCUMENT

CORRECT ANSWER = 40320

15 :- Determine $\angle SRQ$ in the diagram above

CORRECT ANSWER = 85 degree

16 :- The length of an arc of a circle is $\frac{5\pi}{3}$ Calculate the angle subtended at the centre if the radius is 20cm

CORRECT ANSWER = 15 degree

17 :- Solve for x in the equation $3x + 3x^1 - x = 3^{\text{power } 4}$

CORRECT ANSWER = 0,1

18 :- The equation of the line perpendicular to $4x - 3y + 7 = 0$ which passes through the origin is

CORRECT ANSWER = $4y + 3x = 0$

19 :- Given that $y \propto x^2$, If $y = 10$ when $x = 3$, find the value of y when $x = \frac{1}{2}$.

CORRECT ANSWER = $\frac{5}{18}$

20 :- The table above shows the number of students who obtained different marks out of 10, calculate the mean of the distribution

CORRECT ANSWER = 4.5

21 :- Simplify $4x^3 y \times (3xy)^3$

CORRECT ANSWER = $4x^3/9y$

22 :- Find the range of the following data: 1,7,2,3,10,8 and 5

CORRECT ANSWER = 9

23 :- The pie chart above shows the budget allocation of a Local Government Council N53,100,000.00 is allocated to Agriculture, what is the budget for the council

CORRECT ANSWER = 216,000,000

24 :- If $x^2 y = xy + x + y$, solve the equation $x^2 - 3 = 19$

CORRECT ANSWER = 4

25 :- Differentiate $y = x^2 - 4x + 5$

CORRECT ANSWER = $2x - 4$

26 :- Given 9,27,81? find the sum of the first 5 term

CORRECT ANSWER = 1089

27 :- From the figure above, the area of shaded portion is

CORRECT ANSWER = Negative

28 :- A shopkeeper sold $1/6$ of a packet of chocolate to Mrs Pedro and $1/2$ of the remainder to Mrs Buhari. What fraction was sold to Mrs Buhari

CORRECT ANSWER = $5/12$

29 :- Out of 5 masters and 4 boys a committee of 6 is to be chosen. In how many ways can it be done when there are 3 masters on the committee?

CORRECT ANSWER = 40

30 :- If the determinant of $\begin{bmatrix} -4 & p \\ 5 & 7 \end{bmatrix}$ is 2, find p

CORRECT ANSWER = -6

31 :- The fourth term of an Arithmetic Progression is 37 and 6th term is 12 more than the fourth term. Find the common difference

CORRECT ANSWER = 6

32 :- A boy 70cm tall was standing 100cm away from the foot of a tree. If the angle of elevation of the tree from the boy is 45 degree, calculate the height

CORRECT ANSWER =

33 :- Find the remainder when $4x^3 - 8x + 1$ is divided by $2x + 1$

CORRECT ANSWER = $3/2$

34 :- How much will N25,000.00 amount to at 8% simple interest over 10 years?

CORRECT ANSWER = N45,000

35 :- Factorize $2x^2 - 3x - 5$

CORRECT ANSWER = $(x + 1)(2x - 5)$

36 :- Express the square of 110 base 2 in binary

CORRECT ANSWER = (100100) base 2

37 :- If $(3x - 1)$ is a factor of $9x^4 - kx^3 + 3x - 1$, find the value of K

CORRECT ANSWER = 1

38 :- Find the value of

CORRECT ANSWER =

39 :- Evaluate $0.0003/0.0024$ leaving your answer in standard form

CORRECT ANSWER = 1.25×10^{-1}

40 :- WXYZ is a cyclic quadrilateral and the diagonals WY and XZ intersect at G. If $\angle ZWY = 42^\circ$ and $\angle WGX = 70^\circ$, find $\angle WYX$
CORRECT ANSWER = 28 degree