

QUESTION: 1

Find $\int (x^2 + 3x - 5)dx$.

- A $\frac{x^3}{3} - \frac{3x^2}{2} - 5x + k$
B $\frac{x^3}{3} - \frac{3x^2}{2} + 5x + k$
C $\frac{x^3}{3} + \frac{3x^2}{2} - 5x + k$
D $\frac{x^3}{3} + \frac{3x^2}{2} + 5x + k$

QUESTION : 2

Evaluate $\frac{0.0028213}{0.634}$ and give your answer in standard form.

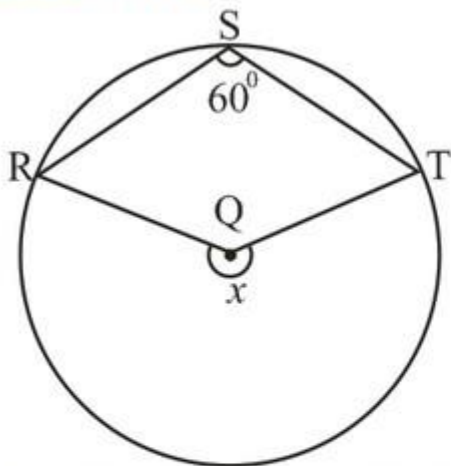
- A 4.45×10^{-3}
B 4.45×10^{-6}
C 4.45×10^{-5}
D 4.45×10^{-4}

QUESTION : 3

Calculate the simple interest on ₦6 500 for 4 years at 6%.

- A ₦1 200
B ₦1 560
C ₦2 400
D ₦2 200

QUESTION : 4



Given the quadrilateral $RSTO$ inscribed in the circle above with O as centre. Find the size of the

- A 100°
B 140°
C 120°

QUESTION : 5

The locus of a point which is equidistant from the line PQ forms a

- A circle centre P .
- B pair of parallel lines each opposite to PQ
- C circle centre Q
- D perpendicular line to PQ

QUESTION : 6

Evaluate $\sin 45^\circ + \sin 30^\circ$ in surd form.

- A $\frac{\sqrt{3}}{2\sqrt{2}}$
- B $\frac{\sqrt{3}-1}{2}$
- C $\frac{1}{2\sqrt{2}}$
- D $\frac{1+\sqrt{2}}{2}$

QUESTION : 7

Scores 5832

Frequency 3156

From the table above calculate the mean of the scores.

- A 3.2
- B 3.4
- C 3.1
- D 3.3

QUESTION : 8

Evaluate $1 - \left(\frac{1}{5} \times 1\frac{2}{3}\right) + \left(5 \div 1\frac{2}{3}\right)$

- A 4
- B 3
- C $2\frac{2}{3}$
- D $3\frac{2}{3}$

QUESTION : 9

Find the gradient of the line joining the points (3,2) and (1,4)

- A $\frac{3}{2}$
- B 1
- C -1
- D $-\frac{3}{2}$

QUESTION : 10

If a rod 10cm in length was measured as 10.5cm, calculate the percentage error.

- A 5%
- B 10%
- C 8%
- D 7%

QUESTION : 11

Given $M = N\sqrt{\frac{SL}{T}}$ make T the subject of the formula.

- A $\frac{NSL}{M}$
- B $\frac{N^2SL}{M^2}$
- C $\frac{N^2SL}{M}$
- D $\frac{NSL}{M^2}$

QUESTION : 12

Evaluate $\frac{0.00000231}{0.007}$ and leave the answer in standard form

- A 3.3×10^{-5}
- B 3.3×10^{-3}
- C 3.3×10^{-4}
- D 3.3×10^{-6}

QUESTION : 13

In many ways can the word MACICITA be arranged?

- A $\frac{8!}{2!}$
- B $\frac{8!}{3!2!}$
- C $\frac{8!}{2!2!2!}$
- D $8!$

QUESTION : 15

Given $T = \{\text{even numbers from 1 to 12}\}$

$N = \{\text{common factors of 6, 8 and 12}\}$

Find $T \cap N$

- A $\{2, 3\}$
- B $\{2, 3, 4\}$
- C $\{3, 4, 6\}$
- D $\{2, \}$

QUESTION : 14

Differentiate $y = 3\cos 2x - \sin 4x$.

- A $-6\sin 2x + 4\cos 4x$
- B $6\sin 2x + 4\cos 4x$
- C $-6\sin 2x - 4\cos 4x$
- D $6\sin 2x - 4\cos 4x$

QUESTION : 16

What is the product of $2x^2 - x + 1$ and $3 - 2x$.

- A $4x^3 - 8x^2 + 5x + 3$
- B $-4x^3 + 8x^2 - 5x + 3$
- C $-4x^3 - 8x^2 + 5x + 3$
- D $4x^3 + 8x^2 - 5x + 3$

QUESTION : 17

What is the geometric mean of 9 and 16?

- A 14
- B 18
- C 15
- D 12

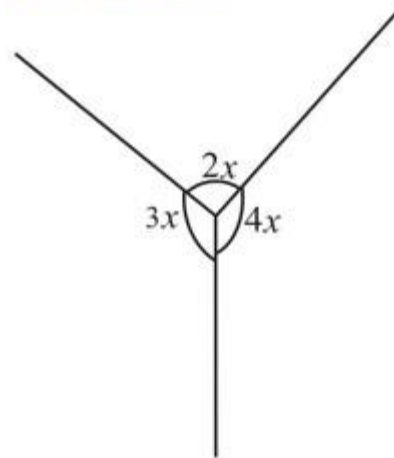
QUESTION : 18

y is inversely proportional to x and $y = 6$ when $x = 7$. Find the constant of the variation.

- A 47
- B 42
- C 54
- D 48



QUESTION : 20



QUESTION : 19

Solve $(x - 3)(x + 2) < 0$

- A $2 < x < 3$
- B $-3 < x < -2$
- C $-2 < x < 3$
- D $-3 < x < 2$

In the figure above find x .

- A 40°
- B 55°
- C 50°
- D 60°

QUESTION : 21

Find the base in which the following addition was performed.

$$\begin{array}{r} 2312 \\ +1013 \\ +2131 \\ \hline 11011 \end{array}$$

- A 7
- B 6
- C 5
- D 8

QUESTION : 22

If temperature t is directly proportional to heat h , and when $t = 20^\circ\text{c}$,
 $h = 50\text{J}$, find t when $h = 60\text{J}$.

- A 24°c
- B 20°c
- C 34°c
- D 30°c

QUESTION : 23

In a class of 45 students, 20 offer Geography while 28 offer Chemistry. How many students offer both

- A 4
- B 5
- C 7
- D 6

QUESTION : 24

$$\begin{array}{r} 1101.01 \\ + 1110.11 \\ \hline 1011.10 \\ \hline 100111.10 \end{array}$$

The base in which the operation was performed was

- A 6
- B 2
- C 4
- D 5

QUESTION : 25

Find the number of ways that the letters of the word EXCELLENCE be arranged.

- A $\frac{10!}{2!2!2!}$
- B $\frac{10!}{4!2!}$
- C $\frac{10!}{4!2!2!}$
- D $\frac{10!}{2!2!}$

QUESTION : 26

A ladder 9m long leans against a vertical wall so that its upper end is 6.5m from the ground. How far is t

- A 8.5m
- B 7.8m
- C 5.6m
- D 6.2m

QUESTION : 27

Find the sum to infinity of the series $\frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \dots$

- A $\frac{1}{2}$
- B $\frac{3}{5}$
- C $\frac{3}{2}$
- D $\frac{2}{3}$

QUESTION : 28

Find the factors of $2x^2 + 5x - 3$

- A $(x - 2)(x + 3)$
- B $(2x - 1)(x + 3)$
- C $(x + 3)(x + 2)$
- D $(x - 2)(2x - 1)$

QUESTION : 29

Find the value of x for which the function $f(x) = 3x^2 - x - 6$ is minimum

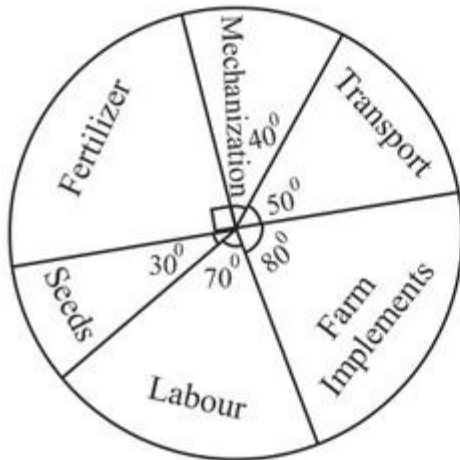
- A $-\frac{1}{6}$
- B $-\frac{73}{12}$
- C $\frac{1}{6}$
- D $\frac{73}{12}$

QUESTION : 30

Find the inverse of the matrix $\begin{pmatrix} 3 & 3 \\ 5 & 6 \end{pmatrix}$

- A $\begin{pmatrix} 2 & -1 \\ -\frac{5}{3} & 1 \end{pmatrix}$
- B $\begin{pmatrix} 2 & 1 \\ -\frac{5}{3} & -1 \end{pmatrix}$
- C $\begin{pmatrix} 2 & 1 \\ \frac{5}{3} & 1 \end{pmatrix}$
- D $\begin{pmatrix} -2 & -1 \\ \frac{5}{3} & 1 \end{pmatrix}$

QUESTION : 31



The pie chart above shows the allocation of money to each sector in a farm. The total amount allocated to the farm is ₦80,000.

- A ₦35,000
- B ₦40,000
- C ₦25,000
- D ₦20,000

QUESTION : 32

Find the range of the following set of numbers

0.4, -0.4, 0.3, 0.47, -0.53, 0.2 and -0.2

- A 1.03
- B 0.07
- C 0.03
- D 1.0

Scores 6543 21

Frequency 9871071

Find the median of the distribution of scores above.

- A 4
- B 3
- C 2
- D 5

QUESTION : 34

A fair die is tossed twice. What is the probability of getting a sum greater or equal to 7?

- A $\frac{5}{12}$
- B $\frac{1}{8}$
- C $\frac{7}{12}$
- D $\frac{3}{4}$

QUESTION : 35

Find the equation of a line which passes through the points (1,-1) and (3,2).

- A $2x - y - 9 = 0$
- B $2y + 3x - 5 = 0$
- C $2x + y + 9 = 0$
- D $2y - 3x + 5 = 0$

QUESTION : 36

Simplify $4\sqrt{27} + 5\sqrt{12} - 3\sqrt{75}$

- A 7
- B -7
- C $-7\sqrt{3}$
- D $7\sqrt{3}$



QUESTION : 38

If $K = \begin{pmatrix} 3 & 1 \\ 4 & 0 \end{pmatrix}$, find $5K - 4I$

- A $\begin{pmatrix} 11 & 5 \\ 20 & 4 \end{pmatrix}$
- B $\begin{pmatrix} 11 & 5 \\ 20 & -4 \end{pmatrix}$
- C $\begin{pmatrix} 11 & -5 \\ 20 & 4 \end{pmatrix}$
- D $\begin{pmatrix} -11 & 5 \\ 20 & 4 \end{pmatrix}$

QUESTION : 37

The operation $*$ on the set \mathbf{R} of real numbers is defined by

$x*y = 3x + 2y - 1$, find $3* - 1$

- A 9
- B -9
- C 6
- D -6

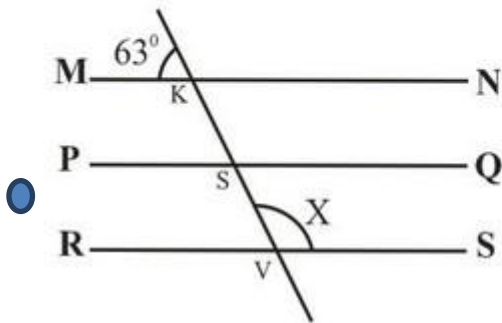


QUESTION : 39

Find the area of a triangle PQR where line $|PQ| = 36\text{cm}$, $|QR| = 15\text{cm}$ and angle $PQR = 90^\circ$.

- A 240 cm^2
- B 320 cm^2
- C 270 cm^2
- D 220 cm^2

QUESTION : 40



In the diagram above MN, PQ and RS are parallel lines. What is the value of the angle marked x ?

- A 123°
- B 170°
- C 117°
- D 137°



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