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%.

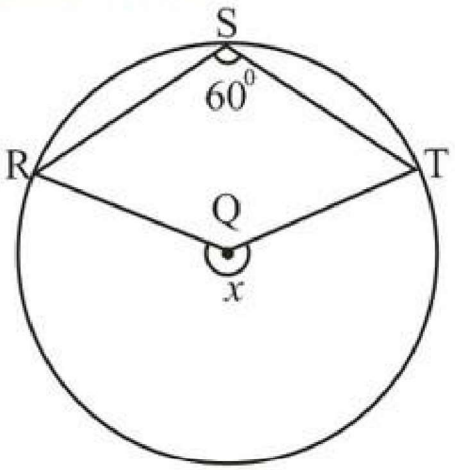
A ₦1 200

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 t

A 100^0

B 140^0

C 120^0

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 $\sin 45^0 + \sin 30^0)$ 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	5	8	3	2
Frequency	3	1	5	6

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 : 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 : 15

Given T = {even numbers from 1 to 12}

N = {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 : 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 : 19

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

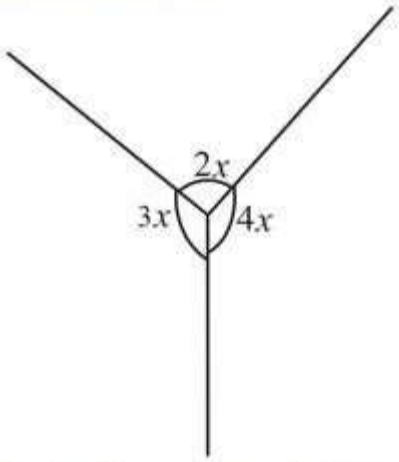
A $2<x<3$

B $-3<x<-2$

C $-2<x<3$

D $-3<x<2$

QUESTION : 20



In the figure above find x.

A 40^0

B 55^0

C 50^0

D 60^0

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 $t = 20^0$c, $h = 50$J, find t when $h = 60$J.

A 24^0c

B 20^0c

C 34^0c

D 30^0c

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 $\frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \ldots$

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 $\begin{pmatrix} 3 & 3 \\ 5 & 6 \end{pmatrix}$

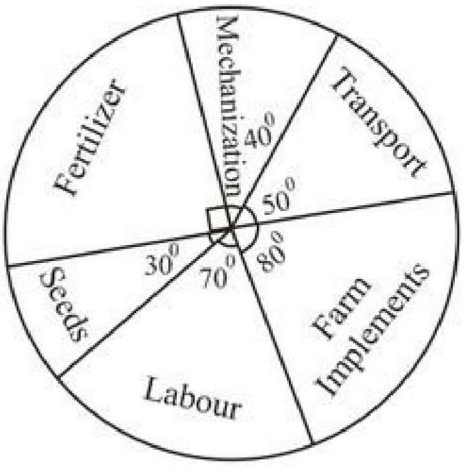
A ✓ $\begin{pmatrix} 2 & -1 \\ -\frac{5}{3} & 1 \end{pmatrix}$

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 ₦80,0

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	6	5	4	3	2	1
Frequency	9	8	7	1	0	7

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 : 37

The operation * on the set **R** of real numbers is defined by $x*y = 3x + 2y - 1$, find 3* - 1

A 9

B -9

C 6

D -6

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 : 39

Find the area of a triangle PQR where line |PQ| = 36cm, |QR| = 15cm and angle PQR = 90^0.

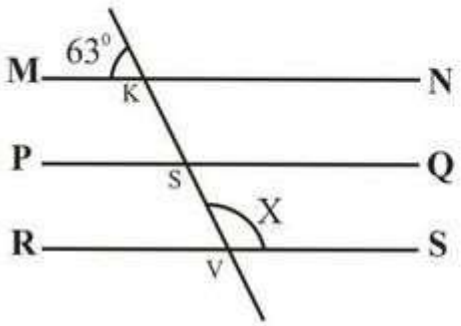
A $240\ cm^2$

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 123^0

B 170^0

C 117^0

D 137^0

8.jpg