# STEM EXAMINATIONS BOARD

## PRE-PRIMARY LEAVING EXAMINATION SET XIV, 2024

## MATHEMATICS

*Time Allowed: 2 hours 30 minutes*

| Index No. | Random No. | | | | | Personal No. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

Candidate's Name: ...................................................................................

Candidate's Signature: .............................................................................

District ID No: ☐ ☐ ☐ ☐

**Read the following instructions carefully:**

1. Do not write your **school** or **district name** anywhere on this paper.

2. This paper has **two** sections: A and B. Section A has 20 questions and Section B has 12 questions. The paper has 8 **printed pages** altogether.

3. Answer **all** questions. **All** the working for both sections **A** and **B** must be shown in the spaces provided.

4. All working must be done using a **blue** or **black** ball point pen or ink. Any work done in pencil other than graphs and diagrams will **not** be marked.

5. **No calculators** are allowed in the examination room.

6. Unnecessary **changes** in your work and handwriting that cannot easily be read may lead to loss of marks.

7. Do not fill anything in the table indicated: **"For Examiners' use only"** and boxes inside the question paper.

| FOR EXAMINERS' USE ONLY | | |
|---|---|---|
| Qn. No. | Marks | EXR'S NO. |
| 1 - 5 | | |
| 6 - 10 | | |
| 11 - 15 | | |
| 16 - 20 | | |
| 21 - 22 | | |
| 23 - 24 | | |
| 25 - 26 | | |
| 27 - 28 | | |
| 29 - 30 | | |
| 31 - 32 | | |
| TOTAL | | |

1. Work out:     385
                    — 162
                    _____

2. Simplify:   $5y - (3y + 4) + 2$.

3. Name the geometric solid shape whose net is drawn below.
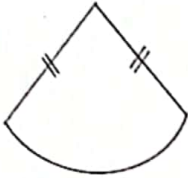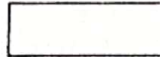


4. Andrew bought $4\frac{1}{2}$ kg of salt and re-packed all in small sackets of 500gms each. How many sackets did he pack?

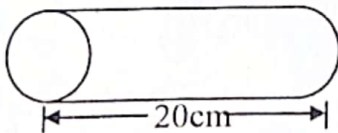5. If a die is tossed once, what chance will a prime numeral show up?

6. Find the next two numbers in the sequence.

   2,  3,  7,  16,  _____,  _____

7. For how long will Shs. 800,000 invested in the bank take to yield interest of Shs. 20,000 at a rate of 5% p.a?

8. Convert $1011_{two}$ to decimal base.

9. The base area of a cylindrical tin below is $616cm^2$, calculate its volume.



|←——— 20cm ———→|

10. Use the restaurant menu below to answer the question that follows.

| THE SUNNY RESTAURANT MENU | | |
|---|---|---|
| MEAL | DESSERTS | DRINKS |
| Fish & chips | Salads | Mango juice |
| Shs. 15000 | Shs. 4000 | Shs. 5000 |

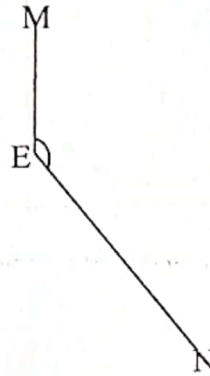Abdul and Tom ate fish and chips with a dessert of salads, how much did they pay altogether?

2

1. Express 3074 to scientific notation.

12. If $r^2 = 196$ metres, find the value of r in metres.

3. A tourist exchanged his 300 US dollars at Uganda Forex bureau bank and got Ug Shs. 1,110,000. State the exchange rate at the forex bureau.

14. Using a protractor, measure angle MEN drawn below.



15. Simplify: $7 - 2n \geq {}^-3$

16. Given that set M = {c, u, p} List down all subsets in set M.

17. Expand 340.07 using exponents.

18. Change 20m/sec to km/hr.

19. 20% of a number is equal to a third of 30. Find the number.

20. Solve for t: $3 - 5 = t$ (finite 6)

3

SECTION B : 60 MARKS
*Answer **all** questions in this section.*
*Marks for each question are indicated in the brackets.*

21.  In a candidate class of 54 pupils, some candidates ate rice (R ) and posho (P). If 23 candidates ate posho and 7 did not eat any of the dishes while 6 candidates ate both rice and posho.

    (a)    Use the given information above to complete the Venn diagram below.    *(1 mark)*

$$n(\mathcal{E}) = 54$$

$$n(R) = \qquad n(P) = 23$$

6    17

7
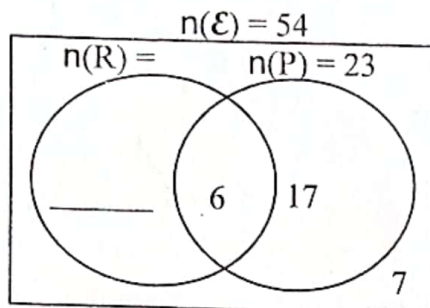
    (b)    How many candidates ate one type of dish only?    *(3 marks)*

22.  (a)    Eucalyptus tree is the $25^{th}$ tree from either side of the line of trees that make the perimeter fence of the school. How many trees make the school perimeter fence.    *(2 marks)*

    (b)    A business lady buys tomatoes in heaps of 8 for Shs. 1000 per heap and then sells them in heaps of 6 for Shs. 1200 each. If she sells 480 tomatoes per day, how much profit does she get from all the tomatoes.    *(2 marks)*

23.  (a)    The average weight of 14 workers is 50kg. When the supervisor joins them average becomes 51kg.
What is the weight of the supervisor?    *(2marks)*

    (b)    If the average age of the grouped data below is 10 years, find the value of p.    *(2 marks)*

| Age | 12 | 10 | p | 8 | 13 |
|---|---|---|---|---|---|
| Number of pupils | ||| | | | || | ||| | || |

4

24. (a) In the diagram below, line AB is parallel to CD. Use it carefully to answer questions that follow.
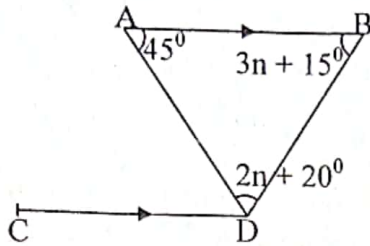


(i) Find the value of n in degrees.
   *(2 marks)*

(ii) Work out the size of angle CDB in degrees.   *(2 marks)*

(b) How many sides has the regular polygon whose interior angle is $100^0$ more than its exterior angle?   *(2 marks)*
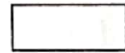
25. A candidate used part of her pocket money to buy some school items below and remained with a change of Shs. 16700.
   (i) $1\frac{1}{2}$ dozen of book at Shs.18000 per dozen.
   (ii) Nine pens at Shs. 800 per pen.
   (iii) A geometry set of Shs. 5500.
   If she used half of the total cost of pens for transport, how much was he pocket money altogether?   *(4 marks)*

*Turn Over*

**26.** Use the number line below to answer the questions that follow.
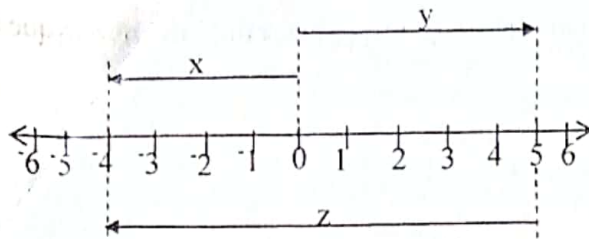


(a) Name the integers represented by arrow;
(i) x =                    *(1 mark)*          (ii)   y          *(1 mark)*

(iii)   z =                                                    *(1 mark)*

(b) Write the mathematical subtraction sentence for the number line above.
*(1 mark)*

**27.** Abdul and Jane contributed some money where Abdul contributed $\frac{1}{5}$ more than Jane.

(a) What fraction of money did Jane contribute? *(2 marks)*

(b) If Jane contributed Shs. 30,000, how much money was contributed altogether? *(2 marks)*

(c) What percentage of money did Abdul contribute? *(2 marks)*

The information below was on the notice board of Life Care Hospital showing number of patients admitted last month.

| WARD | NUMBER OF PATIENTS |
|------|--------------------|
| Maternity ward | 90 |
| Children's ward | 50 |
| Men's ward | 40 |

Display the above information on a circle graph of diameter 6cm in the space below.
*(4 marks)*

1. Use the figure below to answer the questions that follow.

12m

14m

7m
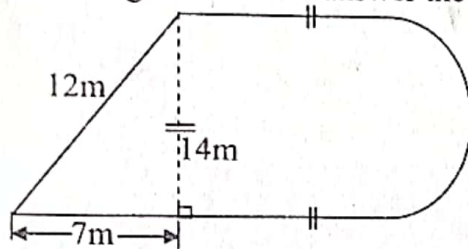
(a) Work out the area covered by the figure. *(3 marks)*

(b) What is the total distance round the figure above. *(3 marks)*

1. Alex drove from village to school via town. He drove at a speed of 90km/hr for $1\frac{1}{3}$ hours to arrive town and continued to school at the same speed for 2 hours.

(a) Find Alex's total distance travelled for the whole journey. *(3 marks)*

(b) Calculate Alex's average speed for the whole journey. *(2 marks)*

*Turn Over*

31.    Use the cube below to answer questions that follow.


$(2x - 4)$cm
$(x + 8)$cm
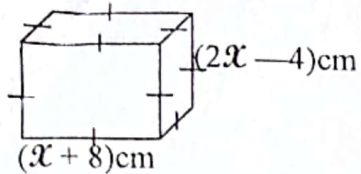
(a)    Solve for the value of $x$.
*(2 marks)*

(b)    Calculate the volume of the cube above.    *(2 marks)*

(c )    Work out the total surface area of the cube above.    *(2 marks)*

32.    (a)    With the help of a ruler, a pencil and a pair of compasses only, construct a triangle ZED in which ZE = ED = 6cm and angle ZED = $120^0$.    *(4 marks)*

(b)    Drop a perpendicular bisector from D to meet line ZE at X and measure height DX.    *(2 marks)*

*END*

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