THE SIPRO PRE-PLE SET VI 2024

MATHEMATICS

Time Allowed: *2 Hours 30 Minutes*

Index No.	Random No.						Personal No.		

Candidate's Name: _____

Candidate's Signature: _____

School Random No: _____

District ID: _____

READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

1. This paper has two sections: **A** and **B**.
2. Section **A** has **20** questions **(40 Marks).**
3. Section **B** has **12** questions **(60 Marks).**
4. Attempt all questions in both sections. All answers to both sections A and B must be written in the spaces provided.
5. All answers must be written in blue or black ball point pens or ***ink***. Only diagrams and graph work must be done in ***pencil***.
6. Unnecessary ***alteration/crossing*** of work will lead to loss of marks.
7. Any ***handwriting*** that cannot be easily read may lead to loss of marks.
8. Do not fill anything in the boxes indicated:

"FOR EXAMINER'S USE ONLY"

For Examiner's Use Only;

Qn No.	MARKS	INITIALS
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
Total		

Please turn over

THE SIPRO EDUCATIONAL SERVICES LIMITED - KAMPALA

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SECTION A: 40 MARKS

Attempt **all** *questions in this section.*
Questions **1** *to* **20** *carry* **two** *marks each*

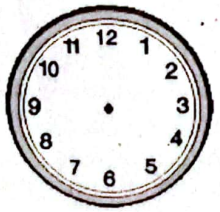
1. **Work out:**
$$\begin{array}{r} 302 \\ \times\ \ 3 \\ \hline \\ \hline \end{array}$$

2. Given that **W** = { 1,2,3 }, find the number of proper subsets in set **W**.

3. Find the **range** of -3, 6, 0, -7

4. **Work out;** $312_{four} + 33_{four}$

5. On the clock face below, represent 0015 hours.



6. $2e^{o}$ and $(3e-10)^{o}$ are complementary angles. Find the value of **e**.

7. **Solve:** $3 - 3h \geq 15$

8. The prime factors of P and Q are $F_p = \{n, 3_1, 3_2\}$ and $F_Q = \{3_1, 5_1, n\}$. If the G.C.F is 6, find the value of **n**.

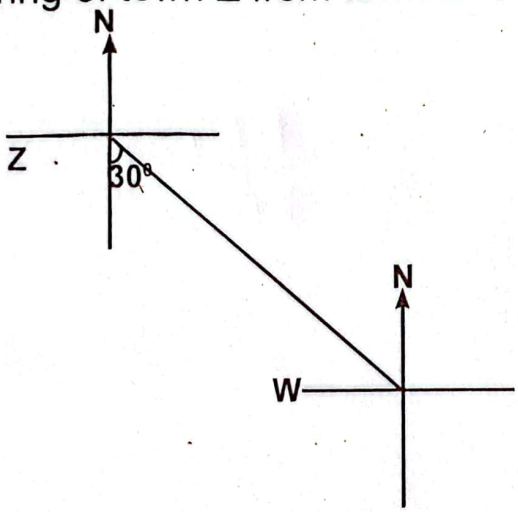
9. **Work out;** $(5 \times \frac{1}{12}) - (2 \times \frac{1}{12})$

10. A hawker bought a belt at sh. 25,000. At what price should he sell it he intends to make a profit of sh.3,000?

11. **Work out;** 2 – 5 = _____(finite 6)

12. Obote had a tyre of radius 35cm. How many revolutions will it make to cover a distance of 11 hectometres?

13. Find the bearing of town **Z** from town **W** in the diagram below.

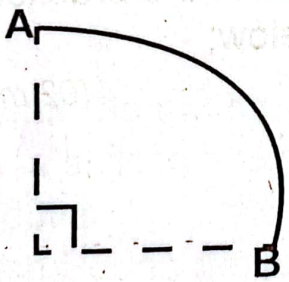


14. **Increase** 180 goats in the ratio of $\frac{3}{4} : \frac{1}{2}$

15. Given that  represent 30 eggs. Draw pictures to represent 60 eggs.

16. If e = -4, n = -5 and y = 3n. **Work out** the value of (e – y) n.

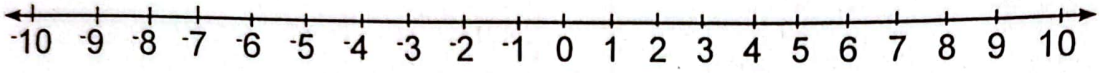
17. The length of the arc **AB** in the figure below is 66cm. Find its radius. (take π as $\frac{22}{7}$)



18. **Solve** for **b**; $2^{3b} \div 2^{b} = 64$

19. A motorist travelling at a speed of 120km/h took 40 minutes to travel from town **K** to town **M**. Work out the distance between the two towns.

20. Use the number line below to work out 4 x -2.



SECTION B: 60 MARKS

Attempt **all** *questions in this section.*

Marks for **each part** *of the question are* **indicated** *in the brackets.*

21.(a) **Find** the number that has been expanded below;

$(3x10^{2}) + (4 x10^{1}) + (6x10^{-2})$ *(02 marks)*

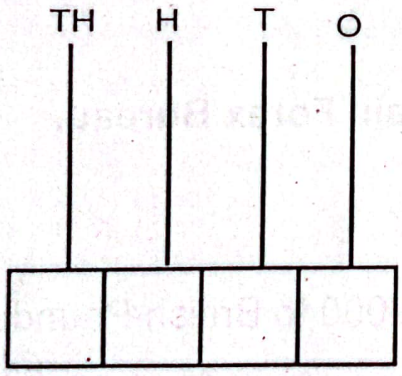
(b) Write **1095** in scientific notation. *(02 marks)*

b) Jane bought a motorcycle at ***325*** dollars. Find the cost of the motorcycle in Kenya shillings. *(03 marks)*

24. A primary six pupil was given cards with digits **5, 3, 0** and **4** to form four digit numerals;
(a) Write the smallest and biggest numerals formed:
(i) smallest numeral *(01 mark)*

(i) biggest numeral *(01 mark)*

(b) Represent the smallest numeral on the abacus below. *(02 marks)*

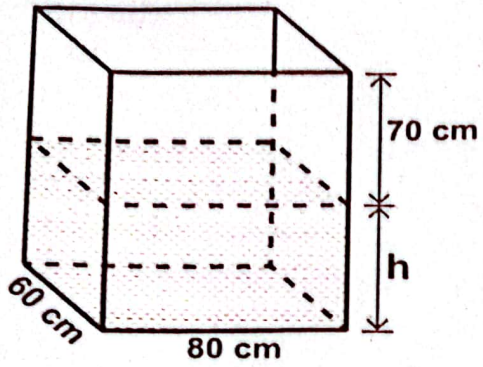


25. The exterior and interior angles of a regular polygon are in the ratio of 2: 3 respectively.
(a) Name the polygon. *(03 marks)*

(b) How many triangles has the polygon? *(02 marks)*

26. The tank below has 240 litres of water in it. *Study it carefully and use it to answer the questions that follow.*

(a) Find the value of h. *(02 marks)*



(b) How many litres of water should be added to fill the tank? *(03 marks)*

27.(a) Using a ruler, a pencil, and a pair of compasses only, construct a rhombus ABCD such that triangle ABC is an equilateral triangle of side 7cm. *(05 marks)*

(b) Measure diagonal AC. *(01 mark)*

28. Solve for **m**:

(a) 4(m-1) -2(m+3) = 0 *(03 marks)*

(b) Kasozi is 58 years old and Magezi is 14 years old. In how many years' time will Kasozi be thrice as old as Magezi? *(03 marks)*

29. Macula used 0.25 of her money to buy a loaf of bread, ½ of the remainder for tea leaves and sugar and saves the rest.

(a) Find the fraction spent on savings. *(03 marks)*

(b) If she saved sh.3,600, find the amount of money she spent on a loaf of bread. *(03 marks)*

30. The median of 4 consecutive even numbers is 13;

(a) Find the numbers. *(03 marks)*

(b) Work out the sum of the smallest and largest numbers. *(02 marks)*

31. A cyclist travelled at a speed of 80km/h covering a certain distance from town **W** to town **Y** taking 3hours.It rested at town **Y** for half an hour before continuing to town **Z** a distance of 100km at a speed of 40km/h.

(a) How far is town **Y** from town **W**? *(02 marks)*

(b) Calculate the cyclist's average speed for the whole journey. *(03 marks)*

32. Given that y = 2x + 3. Complete the table below. *(05 marks)*

X	0	_____	-2	_____	3
Y	_____	5	_____	-3	_____