

THE SIPRO PRE-PLE SET II 2023

MATHEMATICS

Time Allowed: 2 Hours 30 Minutes

Random No.						Personal No.		

Index No.

Candidate's Name: _____

Candidate's Signature: _____

School Random No: _____

District: _____

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* 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



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SECTION A: 40 MARKS

Attempt **all** questions in this section

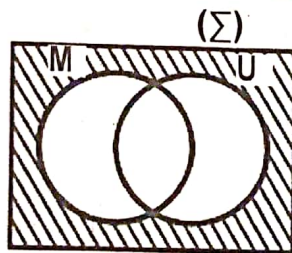
Questions 1 to 20 carry **two** marks each

1. A class monitor was given **two** notes of sh. 5000, how much money has the class monitor?

2. Work out;

$$\begin{array}{r} 1011_{\text{two}} \\ + 111_{\text{two}} \\ \hline \hline \end{array}$$

3. Describe the shaded region.



4. Simplify; $+4 - +9 - 2$

5. Write in **figures**; "Thirteen thousand, nine hundred four and twenty eight hundredths".



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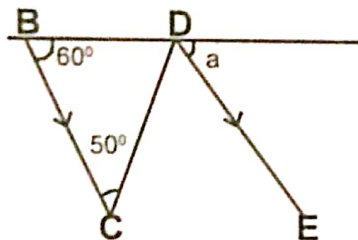
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6. A school has three streams, A with 16 candidates, B with 24 candidates and C with 12 candidates. The head teacher plans to buy pens for the candidates. What **least** number of pens can he buy for the candidates?

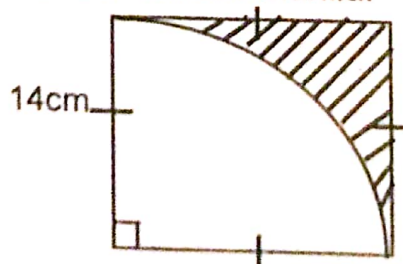
7. Solve the equation; $\frac{2w}{3} + 4 = 12$

8. In the diagram, line BC is parallel to line DE. Find the size of angle a.



9. If  represents 27 stools; Draw pictos for 108 stools.

10. A quadrant was cut out from the square manila piece of side 14cm. Find the **area** of the wasted manila.



11. A tailor had **0.2m** piece of cloth. He cut it into **0.02m** pieces. How many **pieces** did he make from the cloth?

12. A test started at **2:30pm**. A candidate reached **15 minutes** late. If the test lasted for **90 minutes**, How long did the candidate take writing the test?

13. **Seven** school bags cost **sh.420,000**. How many school bags can I get with **sh.180,000**?

14. Moses planted trees in a circular garden of diameter **28 metres**. Work out the **distance** round the circular garden. (use π as $3\frac{1}{7}$)



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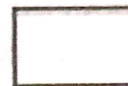
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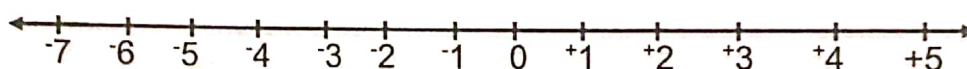
15. Complete the **sequence** below;

2, 4, 8, 16, _____, _____



16. Expand **96,452** using **exponents**.

17. Plot -3 , $+2$, and 0 on the **number line** below.



18. Find the percentage discount of an item which costed **forty-five thousand shillings** and a discount of one thousand five hundred shillings.

19. List the **proper subsets** of set $R = \{r, s, t\}$

20. Work out the **average** of $x + 2$, $2x - 4$, 6 and $3x + 1$.



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SECTION B: 60 MARKS

Attempt **all** questions in this section

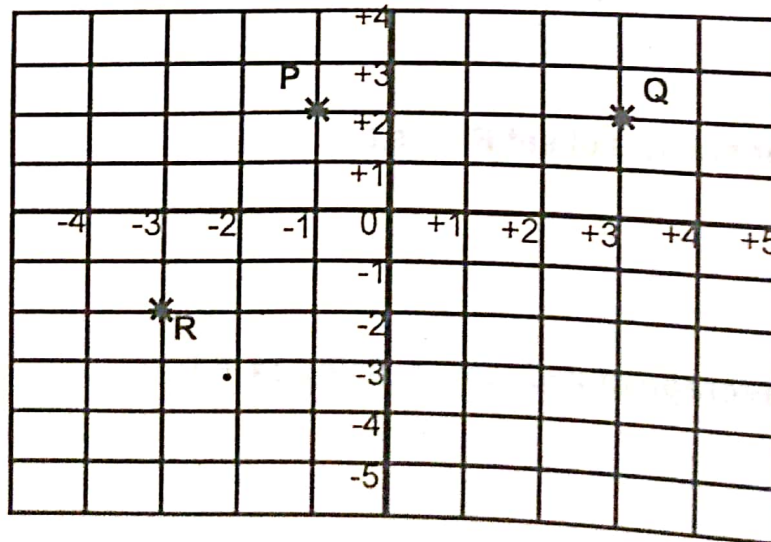
- Marks for **each part** of the question are indicated in the brackets
21. Using a ruler, a pencil and a pair of compasses, draw line $AC = 4\text{cm}$. Bisect AC so that the **perpendicular** bisector meets AC at O . On the bisector line $OB = 2\text{cm}$ and $OD = 6\text{cm}$, **Join** BC , CD , DA and AB to form a quadrilateral $ABCD$.

(04 Marks)

b) Name the quadrilateral **ABCD** formed.

(01 Mark)

22. Write the co-ordinate points **P**, **Q** and **R**.



- i) P _____
 ii) Q _____
 iii) R _____

(03 Marks)



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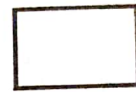
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b) Plot the co-ordinates **S**(+3, -2)

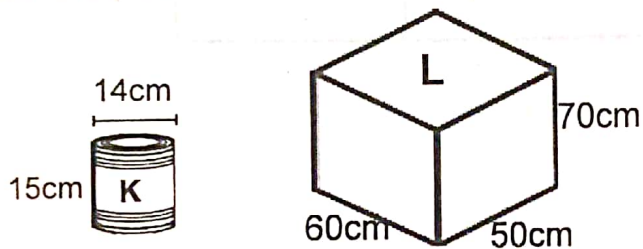
(01 Mark)

c) Join the points to form a **figure** and find its **area**.

(02 Marks)



23. Tin **K** is packed in box **L** at a milk factory.



a) How **many** tins will fill the **first two** layers?

(02 Marks)

b) Calculate the **percentage** loss the factory made if tins on the last layer got spoilt yet each tin costed **sh.4000**.

(02 Marks)



24. A mother sent her son to a shop with the list of items to buy;

2kg of **sugar** at **sh.5500** per kg

250 gm of **salt** at **sh. 2000** per kg.

A bar of soap at **sh 6000**

$1\frac{1}{2}$ kg of **rice** at sh.9000

a) Prepare a shopping bill table for the list above.

Item	Qty	Unit cost	Amount
sugar			
salt			
soap			
rice			
Total			

(05 Marks)

b) If the boy went with **sh.20,000** and it was not enough to buy all the items, how much **more** money was needed?

(01 Mark)

25. a) Round off **67,864** to the nearest **thousands**.

(02 Marks)



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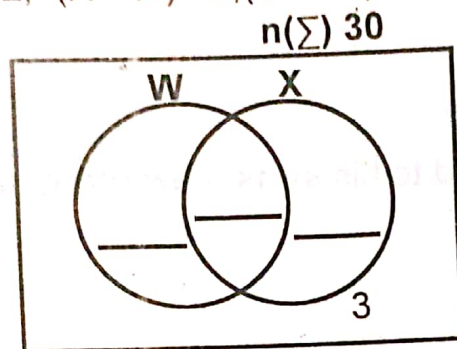


b) Malinga is **XL** years old now. In which **year** was he born?

(02 Marks)

26. a) Complete the Venn diagram with the information given:

$$(W - X) = 12, (X - W) = 8, (W \cup X)^c = 3, n(\Sigma) = 30$$



(03 Marks)

b) What is the **probability** of picking a member of **X** complement?

(02 Marks)

27. a) Solve the **inequality**: $3(2 - X) \leq X + 14$

(02 Marks)

b) Give the **solution set** for X above.

(02 Marks)



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28. Amon divided his land; $\frac{2}{5}$ to his wife, $\frac{1}{3}$ less the remainder to the son and the rest to the daughters.

a) What fraction did he give to his daughters?

(03 Marks)

b) If he gave 20 acres of land to his sons, how many acres did he have altogether?

(02 Marks)

29. A woman started her journey at 8:30 am from Kampala to Kabale. As she reached Masaka, she rested for 45 minutes after covering 180km at 90km/h. She continued to Kabale for 4 hours at 70km/h.

a) Find the woman's average speed for the whole journey.

(04 Marks)

b) At what time did she reach Kabale?

(01 Mark)



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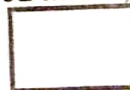
30. The exterior angle of a regular polygon is $\frac{1}{3}$ its interior angle.

a) How many sides has the polygon?

(03 Marks)

b) Find the number of right angles in the polygon.

(02 Marks)



31.a) Work out the square root of 0.0196.

(03 Marks)



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b) Find the number that was prime factorized to give $\{2_1, 2_2, 3_1, 5_1\}$.

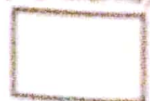
(02 Marks)

32. a) Express the product of 364 and 5 in scientific notation.

b) Given that, $3^n + 27 = 81$. Find the value of n .

(03 Marks)

(03 Marks)



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