THE SIPRO PRE-PLE SET V 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 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.*
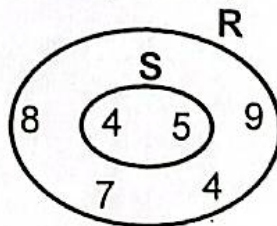*Questions **1** to **20** carry two marks each.*

1. Work out:

$$\begin{array}{r} 1\ 1 \\ +\ 2\ 0 \\ \hline \\ \hline \end{array}$$

2. Simplify: $\dfrac{1}{3} - \dfrac{1}{12}$

3. Write **320,019** in words.

4. Given that $x = 7$ and $y = 5$. Find the value of $\sqrt{3x+3y}$.

5. In the venn diagram below, find **n(R∩S)**.

6. Write **0.0495** in standard form.

7. Using a protractor and a ruler, draw an angle of **105⁰** in the space below.

8. Find the next number in the sequence below;

4, 12, 36, 108, _____

9. Express **7.83** decametres as metres.

10. Given that **1 US dollar** costs **Ush. 3,700**, how much money, in Uganda shillings will one get for **286** US dollars?

☐

11. **Simplify:** $^-11 - {}^-6$

12. A girl read $\underline{2}$ of her novel and remained with **35** pages. How
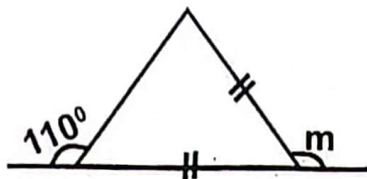   7
   many pages did the girl read?

13. Work out the size of the angle marked **m** in the diagram below.

14. A party that took $2\frac{1}{4}$ hours ended at **7:15 p.m.** At what time did the party start?

15. Ten trees were planted at intervals of **100 metres**. Peter walked from the **2nd** to the **tenth** tree. Find the distance he covered.

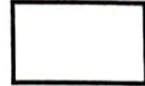16. Given that **b= 2a, b = 2** and **c = 4**. Work out the value of. **b^a+ac**.

17. Find the modal frequency of **5, 3, 5, 8, 3, 5, 5, 7, 3** and **4**.

18. Calculate the **H.C.F** of **20** and **30**.

19. Given that represents **7** fish, draw pictures to represent **35** fish.

20. Moses runs **400** metres in **40** seconds. Express this speed as kilometres per hour.

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

21. **Ochola buys and sells items as shown in the table below.**
    Study and use it to answer the questions that follow.

Quantity	Rate at which Ochola buys	Rate at which Ochola sells
1kg of millet flour	sh. 2,500	sh. 3,000
1kg of groundnuts	sh. 5,300	sh. 6,200
1kg of beans	sh. 4,150	sh. 4,500

(a) Ochola bought **25kg** of groundnuts from Ajambo. How much money did Ochola pay for the beans?   *(02 marks)*

(b) Find how many kilogrammes of beans Ochola bought if he used **sh. 4,025,500** on beans only.   *(02 marks)*

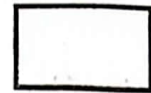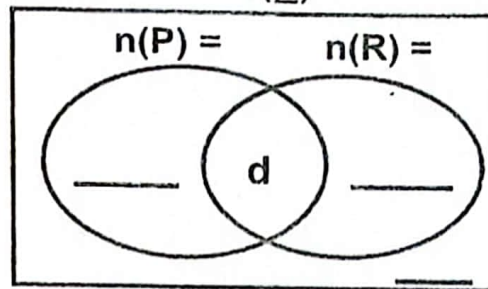(c) Calculate the profit Ochola makes when he sells **70kg** of

(02 marks)

22. In a class, **d** members like both rice (R) and posho (P), d+4 members like rice only, 4d-1 members like posho only and **2d** members like other foods.

(a) Complete the venn diagram using the above information.

$n(\Sigma) =$ *(03 marks)*

$n(P) =$ $n(R) =$

d

(b) If those who like posho only are **19** more members than those who like rice only; Find the value of **d**. *(02 marks)*

(c) Find the probability of picking a member at random who likes other foods. *(01 mark)*

23. The perimeter of a rectangle is **90cm**. The ratio of its length to its width is **5:4** respectively.

   (a) Find the length and width for the rectangle. *(03 marks)*

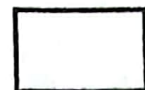   (b) Calculate the area of the rectangle. *(02 marks)*

24(a) Solve for y; $4(2y + 3) - 3(y - 1) = 30$ *(03 marks)*

   (b) Solve and find the solution set for k. *(02 marks)*

   $$\frac{2k}{3} - 1 \leq 3$$

25(a) Express 0.2727........as a fraction. *(02 marks)*

(b) **Simplify:** $\dfrac{1.45 - 0.55}{0.28 + 0.08}$ *(03 marks)*

26. The table below shows how a motorist travelled from town **A** to town **D** through towns **B** and **C**. *Study and use it to answer the questions that follow.*

Town	A	B	C	D
Arrival		9:30 a.m.	10:35 a.m.	1:00 p.m.
Departure	9:00 a.m.	9:40a.m.	11:10a.m	

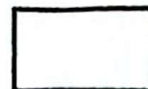(a) How long did the motorist stay at C?

(01 mark)

(b) Find the time the motorist took to travel from town **B** to town **D**.

(02 marks)

(c) A motorist drove at an average speed of **60km/h**. Calculate the distance she travelled from town **A** to town **D**.

(02 marks)

27. A welder is to extract circular metallic designs of a door of area **616cm²**. How many circular designs will be extracted from a square metal of side **56cm**? *(04 marks)*

28. The sum of four consecutive even numbers is **108**. If the greatest number is **y**;
    (a) Find the numbers. *(03 marks)*
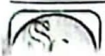
    (b) Find their range. *(01 mark)*

29. A plane left town **A** and flew **140km** due East to town **B**, it then changed direction and flew on a bearing of **240⁰** to town **C** at a steady speed of **60km/h** for **2** hours.

(a) Draw a sketch diagram to show the positions of the three towns.

(01 mark)

(b) Using a scale of **1cm** to represent **20km**, draw an accurate diagram to show the positions of the towns.
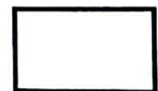
(03 marks)

30. Ritah, Julianah and Safina contributed a certain amount of money to start a business in the ratio of **3:4:8** respectively. If Ritah and Juliana together contributed **sh. 250,000** less than Safinah's contribution;

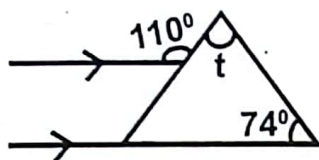(a) How much did Julianah contribute? *(04 marks)*

(b) Express Ritah's contribution as a percentage of their total contribution. *(02 marks)*

31(a) Study the figure below and find the size of angle marked **t**. *(02 marks)*

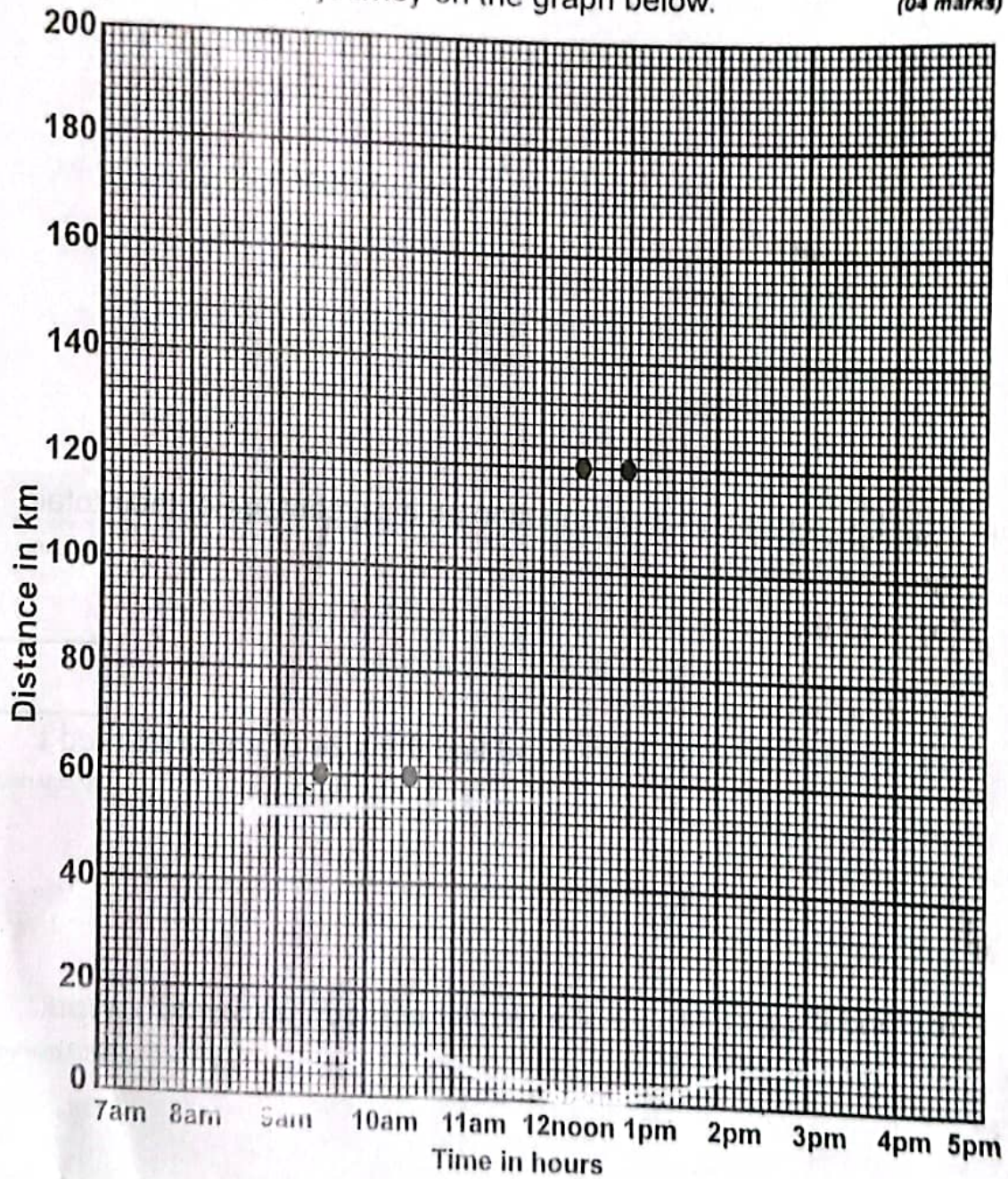(b) Each interior angle of a regular octagon is $(5x+30^0)$. Work out the value of **x**. *(03 marks)*

32. Kato leaves town K for town Q through town P at 8:00 a.m. He travels for 1 hour and 30 minutes at 40km/h to town P. He waits for one hour at town P and continues to town Q covering a distance of 60km in 120 minutes. At Q, he rests for 30 minutes and then travels back to town K for 2 hours.

(a) Represent Kato's journey on the graph below.   (04 marks)

(b) At what time does Kato reach town K?   (01 mark)