THE SIPRO PRE-PLE SET I 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

THE SIPRO EDUCATIONAL SERVICES LIMITED - KAMPALA

PUBLISHERS OF THE SIPRO TEACHERS' GUIDES, LEARNER'S WORKBOOKS & HOLIDAY ASSIGNMENTS

SECTION A: 40 MARKS

Questions 1 to 20 carry two marks each

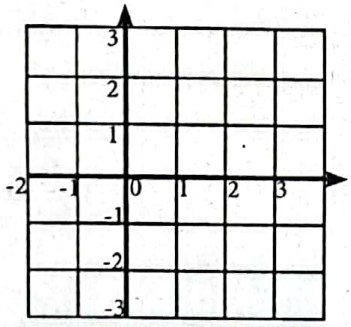
1. **Work out;**
$$\begin{array}{r} 5\ 4\ 7 \\ -\ 1\ 0\ 3 \\ \hline \\ \hline \end{array}$$

2. Write **CIX** in words.

3. **Subtract;** $1 - \frac{3}{4}$

4. Solve for **e**; $2(e - 3) = 18$

5. Use the graph below to find the co-ordinates of point **W**.



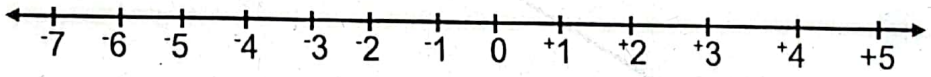
6. Given that set H ={first five composite numbers}. Set G = {first five triangular numbers}. Find n(HUG).

7. Complete the **sequence** correctly;
   8, 4, 2, 1, ____

8. A cyclist left Mbarara at **10: 05 pm** and reached Kasese at **5: 20 am**. How **long** was the journey?

9. **20 poles** are fixed in a straight line along one side of the road. The poles are fixed at intervals of **5 metres**. Find the length of the road.

10. Work out $^{-}4 - {}^{-}6$ using a number line.

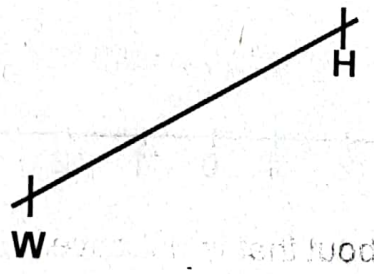


11. At a music concert, tickets worth **sh 20,000** were issued out numbered consecutively from 572 to 771. How much money was collected?

12. The circumference of a semi-circle is **22dm**. Work out its **diameter**. (Take π as $3\frac{1}{7}$)

13. Mr Boaz borrowed **sh 180,000** for **3years**. He paid back a total sum of **sh 216,000**. Calculate his **percentage** rate.

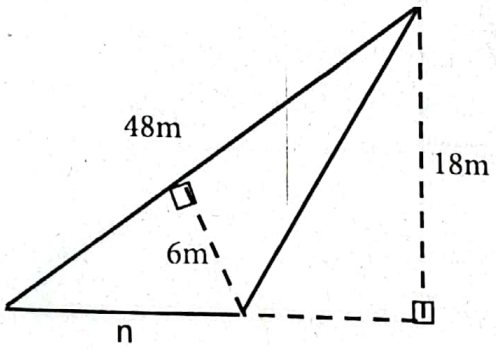
14. Using a ruler, a pencil and a pair of compasses only, draw a perpendicular bisect on the line segment WH.



15. Solve for **b**; $3^{2b} \div 81 = 1$

16. The average mass of **4 girls** is **35kg**. If the average mass of 3 girls is 90kg, Find the mass of the third girl.

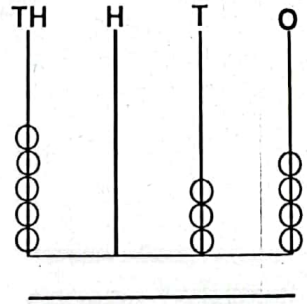
17. Study the figure below carefully and use it to find the **value** of **n** in **metres**.



18. Solve the **inequality;** $3(2 - p) < 15$.

19. **Sove for M;** $\frac{M}{5} = 6 \pmod 7$

20. Write the **number** shown on the abacus in **scientific form.**

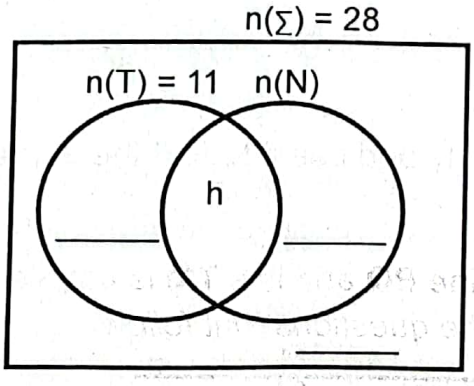


SECTION B: 60 MARKS

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

21. In a club of 28 girls, 11 of them play tennis(T) and (5 + h) play netball only (N), h play both games while 2h play neither of the two games.

a) Complete the venn diagram below.



(03 Marks)

b) How many girls **never** played netball?

(03 Marks)

22. Tap **W** fills a tank in 9 minutes and tap **Z** takes **3** minutes **longer** than Tap **W** to fill the same tank.

(a) If 700 litres of water are poured in the tank by all the taps in one minute, find the **capacity** of the tank.

(03 Marks)

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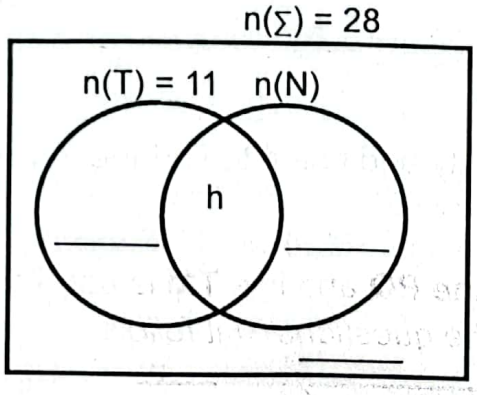

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b) How many girls **never** played netball?

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22. Tap **W** fills a tank in 9 minutes and tap **Z** takes **3** minutes **longer** than Tap **W** to fill the same tank.

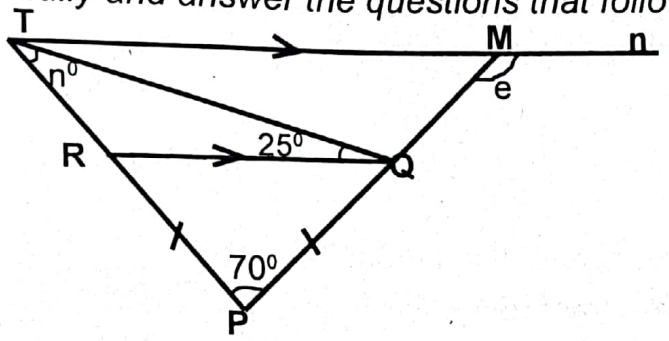
(a) If 700 litres of water are poured in the tank by all the taps in one minute, find the **capacity** of the tank.

(03 Marks)

b) If a 20 litre jerrycan of milk is sold at **sh 16,000;** How much money was collected from the sale of the tank full of milk?

(02 Marks)

23. In the figure below, line **PR= line PQ** and line **TM** is parallel to line **RQ**. *Study it carefully and answer the questions that follow.*



Find the size of angle;

i) n

(03 Marks)

ii) e

(02 Marks)

24. Musoke went to the supermarket and bought the following items;

3 watermelons at sh 9000

1200gm of rice at sh 5000 per kg

20 sweets at sh 300 per 5 sweets

$3\frac{1}{2}$ litres of cooking oil at sh 12000 per litre.

If he was given a discount of 10%, how much did he pay?

(05 Marks)

25. a) Solve for **m**; $2m - \frac{m}{3} = 5$

(02 Marks)

b) **Solve** the equation; $4(4g - 2) - 4(2g + 6) = 16$

(03 Marks)

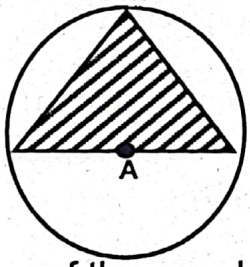
26. Use a **dial** to work out; 3 - 4 = ___(mod 6)

(02 Marks)

b) Akello had some apples. When she grouped them in heaps of **6, 5 apples** were left and when he put them in groups of **7**, **6** remained. How many apples did she have?

(03 Marks)

27. The figure below shows a roundabout with a triangular flower garden in it. **A** is the centre of the roundabout and the total distance around the roundabout is **88 metres**. *Study the figure and answer the questions that follow.*



Find the **area** of the roundabout that is not covered by the flower garden.(Take π as $\frac{22}{7}$)

(05 Marks)

28. Kelly, Kenneth and Cate are running a **10,000** metre race. Kelly completes her first lap after **60** seconds, Cate completes her first lap after **75** seconds and Kenneth completes his after **90** seconds.

a) When will they all be at the starting point together again if they are running at a constant speed throughout the race?

(02 Marks)

b) At what speed is Kenneth running in **kilometres** per hour?

(03 Marks)

29. Using a ruler and a pair of compasses only, construct a rhombus PQRS where line PQ= 6cm and angle QRS= 60°. Drop a perpendicular line from S to meet line **PQ** at **W**.

(04 Marks)

b) Measure angle PSW.

(01 Mark)

30. The table below shows a journey by a bus from town **V** to town **Z** via town **W**,**X** and **Y**. *Study and use it to answer the questions that follow.*

Distance in km	Towns	Departure	Arrival
0	V	8: 00am	
56	W	9: 45am	9: 00am
113	X	11: 20am	11: 00am
165	Y	2: 10pm	1: 00pm
277	Z	6: 50pm	6: 10pm

a) What is the distance in kilometres from town **X** to town **Z**?

(01 Mark)

b) What is the arrival time at **Z** in a 24 hour clock system?

(01 Mark)

c) How long does the bus take stopping at **W**?

(01 Mark)

d) Calculate the average speed of the bus between town **Y** and town **Z**.

(02 Marks)

31. Mr Okoboi, a poultry farmer collects **15,600** eggs a day on his farm and packs them on trays which carry **30** eggs each. His vehicle carries **40** trays per trip to the market. How many trips will the vehicle make in order to transport all the day's eggs?

(03 Marks)

32. Given that; **y = 3x-5,** complete the table below.

X	4	_____	$\frac{1}{3}$	_____	3
Y	_____	-2	_____	-8	_____

(05 Marks)