

# THE SIPRO MOCK 2023

## MATHEMATICS

Time Allowed: 2 Hours 30 Minutes

Random No.

Personal No.

Index 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;

PAGES	MARKS	INITIALS
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Total		

Please turn

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**SECTION A: 40 MARKS**  
Questions 1 to 20 carry two marks each

1. Work out:  $\frac{7}{9} - \frac{5}{9}$

2. Write in figures; Seven thousand, four hundred thirty-three.

3. Simplify:  $3k + 2y - 4k + 5y + 7k$

4. Work out the LCM of 12 and 36.

5. Work out:  $9 \overline{)2763}$

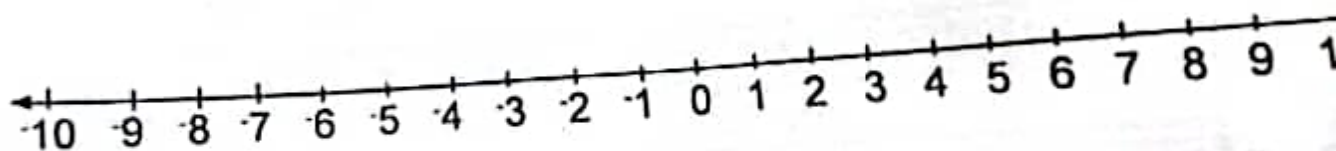
6. Find the next two numbers in the sequence.  
1, 3, 6, 10, 15, \_\_\_\_\_, \_\_\_\_\_

7. Jumba deposited sh. 200,000 in a bank that offers an interest rate of  $7\frac{1}{2}\%$  per month for  $1\frac{1}{3}$  years. How much interest did he receive?

8. What base two number has been expanded to give;  
 $(1 \times 100)_{\text{two}} + (1 \times 10)_{\text{two}} + (1 \times 1)_{\text{two}}$ ?

9. The subsets that can be formed from set N are  $\emptyset, \{1\}, \{2\}, \{1, 2\}$ .  
Find the number of **proper subsets** that can be formed from set N

10. Show:  $-3 + +5$  on the number line below.



11. Work out: years                      months

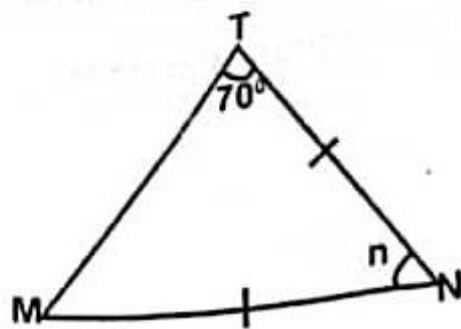
7	05
-2	10
<hr/>	
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12. Fill in the two missing **equivalent** whole numbers.  
 $2(\text{finite } 7) = 2, 9, 16, \underline{\hspace{2cm}}, \underline{\hspace{2cm}}$

13. Change 4800 metres into dm.



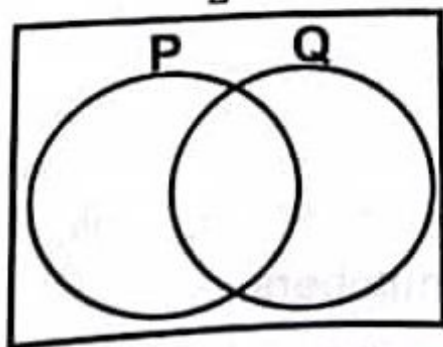
14. The figure below is a triangle MTN. Find the value of  $n$  in degrees.



15. Subtract  $3k - 5$  from  $7k + 2$ .

16. Express  $0.0082$  in standard form.

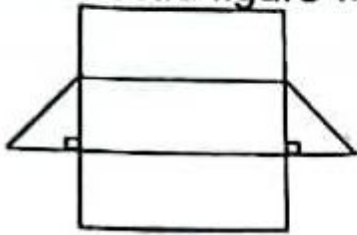
17. Shade  $(P \cap Q)^c$  in the venn diagram below.



18. Walusansa scored the following points in a game:  
 $6, -7, 8, 0$  and  $-10$ . Find the range of score.

19. The bursar of Step by Step Junior School made a money withdrawal of ten thousand shillings notes numbered consecutively from MK 5648 to MK 5690 from a bank. How much was her withdrawal?

20. Name the solid figure whose net is drawn below.



### SECTION B: 60 MARKS

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

21. The table below shows the arrival and departure time for a bus which travelled from Iganga to Masaka. Study and use it to answer the questions that follow.

TOWN	ARRIVAL TIME	DEPARTURE TIME
Iganga		8:30am
Jinja	9:10am	9:20am
Kampala	10:25am	10:35am
Masaka	12:00 noon	

- a) At what time did the bus leave for Jinja?

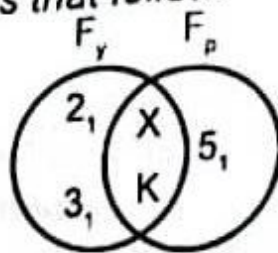
- b) Express the arrival time in Masaka in a 24 hour clock system. (01 mark)

- c) How long did the bus take to travel from Iganga to Masaka? (01 mark)

- 22.a) Four pieces of wire measuring 48m, 36m, 24m and 60m are to be cut into an exact number of pieces without wastage. What is the length of the longest piece of wire that can be cut from each wire?

(02 marks)

Study the prime factors on the venn diagram below and use it to answer the questions that follow.



- b) Given that the GCF of  $F_Y$  and  $F_P$  is 6, find the;  
i) LCM of  $F_Y$  and  $F_P$

(02 marks)

ii) value of Y.

23. The interior angle sum of a regular polygon is  $720^\circ$ .

(02 marks)

a) Name the polygon.

- b) Find its number of;  
i) triangles

(03 marks)

ii) right angles

(02 marks)

24. 50% of the pupils in the class are above 12 years. 20% of the remainder are 11 years and the rest are below 11 years.

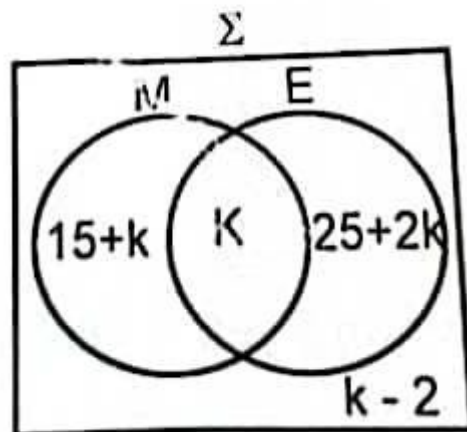
a) What percentage of children are below 11 years?

(03 marks)

b) If 12 pupils are below 11 years, how many pupils are in the class?

(02 mark)

25. The venn diagram below shows the number of pupils who like Mathematics (M) and English (E) at St Andrew's Molly Foundation School - Pabo.



If the **difference** between the number of pupils who don't like Mathematics and that of those who like it is 13;

a) Find the value of  $K$ .



b) What is  $n(M \cup E)$ ?

(02 marks)

c) If a pupil is chosen randomly from this school as the head prefect, what is the **probability** that they like maths?

(01 mark)

26. Wasswa is **four times** as old as his son. In 6 years time, the difference in their ages will be **30 years**.

a) How old is Wasswa now?

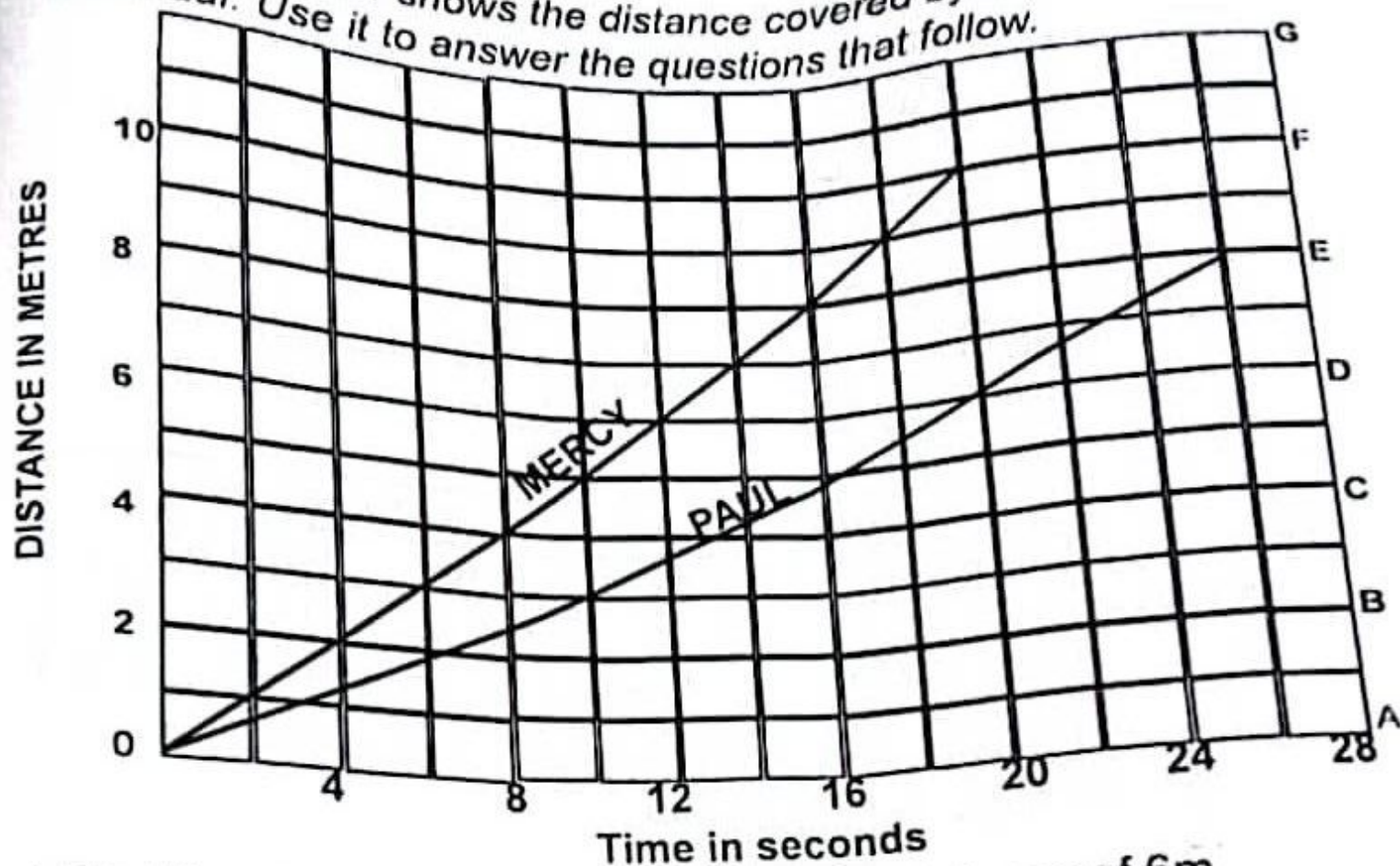
(03 marks)

b) How old was Wasswa's son 3 years ago?

(02 mark



27. The graph below shows the distance covered by two babies Mercy and Paul. Use it to answer the questions that follow.



- a) Find the time each baby took to cover a distance of 6m.
- Paul \_\_\_\_\_
  - Mercy \_\_\_\_\_

b) How far was Paul by the time Mercy reached point F?

c) What distance did Paul cover in 16 seconds?

28. The sum of the values in the table below are the same vertically, horizontally and diagonally.

9	t	7
4	k	8
n	10	3

a) Find the magic sum.

b) Work out the value of;

(i) n

(ii) t

(iii) k

(03 marks)

9. The table below shows how a bank bought and sold United States dollars and Kenya shillings on a certain day at different points of time. Study and use it to answer the questions that follow.

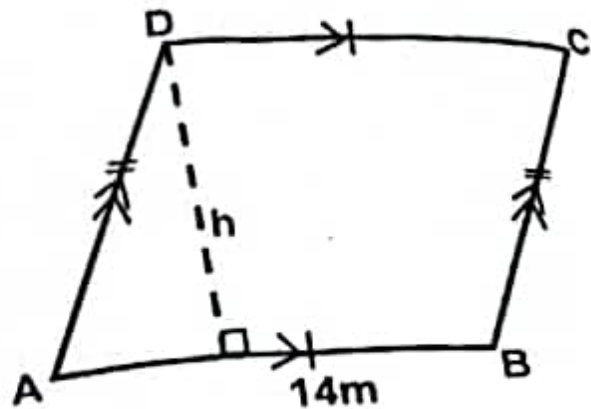
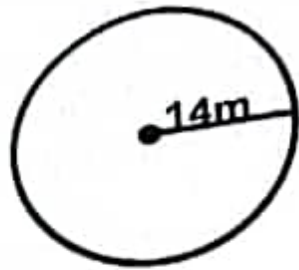
Currency	Morning		Afternoon	
	Buying	Selling	Buying	Selling
1 Kenya shilling	Ugsh. 25	Ugsh. 27	Ugsh. 24	Ugsh. 28
1 US dollar	Ugsh. 3700	Ugsh. 3750	Ugsh. 3690	Ugsh. 3760

a) If Raudhar had 300 US dollars, how much money in Uganda shillings did she get from the bank that afternoon?

(02 marks)

Given that Ruto has 18000 Kenya shillings, how many US dollars did he get from this bank if this transaction took place at around 9:30am?

30. The diagram below shows a parallelogram ABCD and a circle of radius **14m**. If the area of the parallelogram is  $\frac{1}{4}$  of the area of the circle, find the value of  $h$ .



- 31.a) Round off 347 to the nearest tens.

- b) Expand 4219 using exponents.

32. Town P is 60km east of town Q. Town R is 50km from town P on a bearing of  $240^\circ$ .

a) Using a scale of 1cm to represent 10km, show the position of the three towns on an accurate diagram.

Find the **shortest** distance between town R and town Q.