

# THE SIPRO END OF TERM III EXAMINATIONS 2023

SUBJECT : MATHEMATICS  
CLASS : PRIMARY SIX  
DURATION : 2 hours 30 minutes

Name : \_\_\_\_\_  
School : \_\_\_\_\_  
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;

PAGES	MARKS	INITIALS
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Page 4		
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Page 7		
Total		

Please turn over



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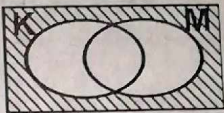
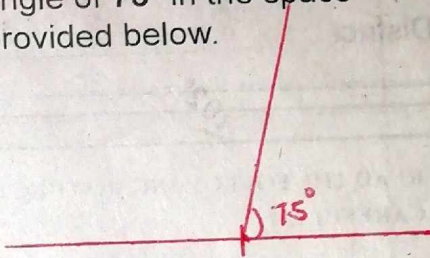
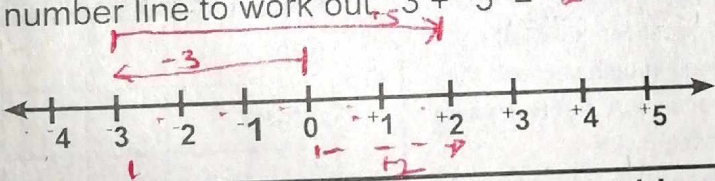

SEMA

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# SECTION A: 40 MARKS

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

- |  |  |
|--|--|
| 1. Find the number which represents the drawn tallies.<br><br>$\begin{array}{c} \text{    } \text{    } \\ 5 + 4 = 9 \end{array}$  | 2. Given set $M = \{w, o, m, a, n\}$ and set $N = \{m, a, t, h, s\}$ . Find $n(M-N)$ .<br>$M-N = \{w, o, n\}$<br>$n(M-N) = 3$  |
| 3. Complete the sequence below;<br><br>2, 5, 3, 6, 4, 7, <u>5</u><br>$\begin{array}{c} \text{V V V V V V} \\ +3 -2 +3 -2 +3 -2 \end{array}$<br>$7 - 2 = 5$   | 4. Describe the shaded region in the venn diagram.<br> $\Sigma (K \cup M)'$          |
| 5. Write "three hundred ninety thousand thirty-two" in figures.<br>$\begin{array}{r} \text{Three hundred ninety thousand} \\ = 390,000 \\ + \quad \quad \quad 32 \\ \hline \text{Thirty two} \quad \quad \quad 32 \\ \hline 390,032 \end{array}$   | 6. Use a protractor to draw an angle of $75^\circ$ in the space provided below.<br> |
| 7. Use the number line to work out, $-3 + +5 = +2$<br>   |  |
| 8. The pie chart below shows how a man spent his monthly salary. Use it to answer the question that follows.<br> <p>If his monthly salary is sh. 2,400,000, how much does he spend on food?</p> $\begin{array}{l} 150^\circ \times \text{sh. } 2,400,000 \\ \hline 360^\circ \end{array}$ $\begin{array}{r} 40000 \\ 150 \times 240000 \\ \hline 360 \end{array}$ $\begin{array}{r} \text{sh. } 2,400,000 \\ \times 50 \\ \hline \text{sh. } 120,000,000 \\ \hline \text{sh. } 1,000,000 \end{array}$ |  |



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9. The table below shows the rate at which the bank buys and sells currency.

Currency	Buying rate	Selling rate
1 dollar	Ugsh 3500	Ugsh 3600

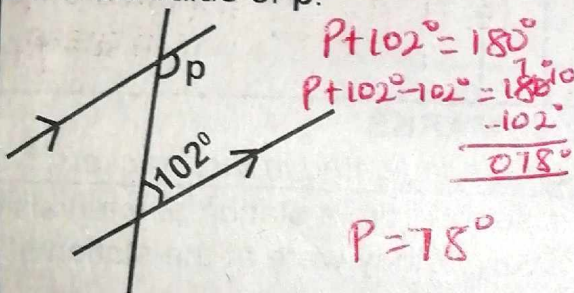
How much will John pay for a table in Uganda shillings which costs 70 US dollars?

$$\begin{array}{r}
 1 \text{ US dollar} \text{ --- Ugsh. } 3500 \\
 \text{Ugsh. } 3500 \\
 \times \quad 70 \\
 \hline
 0000 \\
 24500 \\
 \hline
 245000
 \end{array}$$

10. Mwajuma borrowed sh. 1,200,000 from a SACCO which offered an interest rate of 12% for 6 months. Find the interest he paid in 6 months.

$$\begin{aligned}
 I &= P \times r \times t \\
 I &= \text{sh. } 1,200,000 \times 6 \times \frac{12}{100} \\
 I &= \text{sh. } 864,000
 \end{aligned}$$

11. Find the value of  $p$ .



12. A cylindrical container has a radius of 7cm and 120cm height. Calculate the volume of the container.

$$\begin{aligned}
 V &= \pi r^2 h \\
 V &= \frac{22}{7} \times 7\text{cm} \times 7\text{cm} \times 120\text{cm} \\
 V &= 154\text{cm} \times 120\text{cm} \\
 V &= 18,480\text{cm}^3
 \end{aligned}$$

13. A man rode at 80km/h to cover a distance of 160km. How long was the ride?

$$\begin{aligned}
 T &= \frac{D}{S} \\
 T &= \frac{160\text{km}}{80\text{km/hr}} \\
 T &= 2 \text{ hours}
 \end{aligned}$$

14. Subtract 324 from 972.

$$\begin{array}{r}
 972 \\
 - 324 \\
 \hline
 648
 \end{array}$$

15. Work out:  $\frac{0.12 \times 3.6}{0.06}$

$$\begin{aligned}
 \frac{0.12 \times 3.6}{0.06} &= \frac{\frac{12}{100} \times \frac{36}{10}}{\frac{6}{100}} \\
 &= \frac{12 \times 36}{100} \times \frac{100}{6} \\
 &= \frac{12 \times 36}{6} \\
 &= 12 \times 6 \\
 &= 72
 \end{aligned}$$

16. Write 67.24 in expanded form using powers of 10.

$$\begin{aligned}
 67.24 &= (6 \times 10^1) + (7 \times 10^0) + (2 \times 10^{-1}) + (4 \times 10^{-2}) \\
 &= 60 + 7 + \frac{2}{10} + \frac{4}{100} \\
 &= 67 + 0.2 + 0.04 \\
 &= 67.24
 \end{aligned}$$





23  
a)

17 Work out:  

weeks	days
5	2
-3	3
1	6

$7+2=9$   
 $9-3=6$   
 $4-3=1$

18 Find the GCF of 24 and 36.  

2	2	4	3	6
2	1	2	1	8
3	6	9		
3	3	3		
1	1	1		

 $2 \times 3 = 6$

19 Convert 650kg to grammes.  
 $1\text{kg} = 1000\text{g}$   
 $650\text{kg} = (650 \times 1000)\text{g}$   
 $650,000\text{g}$

20 Work out:  

1	1
2	3
4	five
+	1
2	3
five	
4	1
2	

$3 \times 4 = 12$   
 $2 + 4 = 7$   
 $7 \div 5 = 1 \text{ rem } 2$   
 $1 + 3 + 2 = 6$   
 $6 \div 5 = 1 \text{ rem } 1$   
 $1 + 2 + 1 = 4$

SECTION B: 60 MARKS

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

21 Three vehicles a car, taxi and a bus set off from a station at intervals of 20 min, 30min and 40 min respectively. If they were at the station at 7:30 a.m;

a) After how long will they meet?  

2	20	30	40
2	10	15	20
2	5	15	10
3	5	15	5
5	5	5	5
1	1	1	1

$(2 \times 2) \times (2 \times 3 \times 5)$   
 $4 \times 2 \times 15$   
 $8 \times 15$   
 $45$   
 $\times 8$   
 $120 \text{ minutes}$

b) At what time will they meet again?  

$20\text{min} \rightarrow \frac{1}{3} \text{ hr}$   
 $30\text{min} \rightarrow \frac{1}{2} \text{ hr}$   
 $40\text{min} \rightarrow \frac{2}{5} \text{ hr}$

Hours	minutes
7	30
+	2
9	30

At 9:30 a.m

22 Calculate the sum of the value of 9 and the value of 7 in 2975.  

2	9	7	5
---	---	---	---

$(9 \times 10) = 90$   
 $(9 \times 100) = 900$

$900$   
 $+ 90$   
 $990$

b) Give the place value of 2 in the number above.  

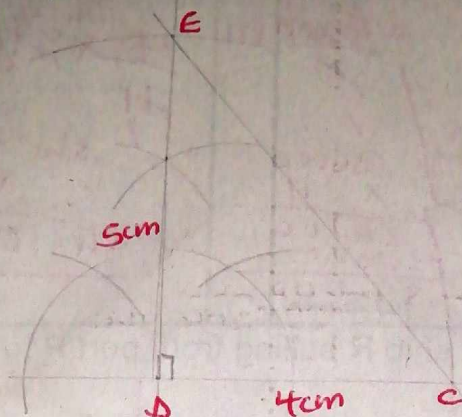
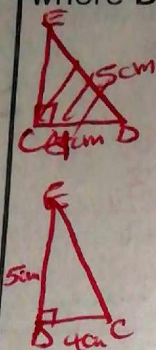
2	9	7	5
---	---	---	---

Thousands





- 23 Use a ruler, pencil and a pair of compasses to construct triangle CDE where  $DE = 5\text{cm}$ ,  $DC = 4\text{cm}$  and angle  $D = 90^\circ$ .



(04 marks)

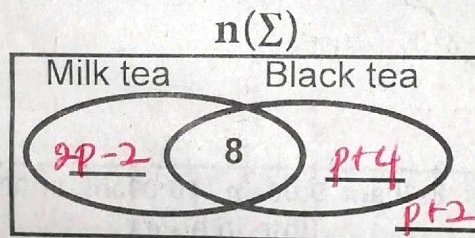
- b) Measure angle CED.

$50^\circ$

(01 mark)

- 24 At a conference,  $2p-2$  guests took milk tea only,  $p+4$  took black tea only and 8 guests took both milk and black tea while  $p+2$  took neither of the two.

- a) Complete the venn-diagram below with the information above.



(03 marks)

- b) If the guests who took both milk and black tea doubled the number of guests who took neither of the tea, find the value of  $p$ .

$$\begin{aligned}
 2(p+2) &= 8 \\
 2p+4 &= 8 \\
 2p+4-4 &= 8-4 \\
 2p &= 4 \\
 \frac{2p}{2} &= \frac{4}{2} \\
 p &= 2
 \end{aligned}$$

- c) How many guests attended the conference?

(02 marks)

$$\begin{aligned}
 (2p-2) + 8 + (p+4) + (p+2) &= 2 + 8 + 10 \\
 (2 \times 2) - 2 + 8 + (2+4) + (2+2) &= 10 + 10 \\
 (4-2) + 8 + 6 + 4 &= 20 \text{ guests}
 \end{aligned}$$

(01 mark)





25 Joy, Ali and Grace saved their money in the ratio 5:4:2 respectively. If Joy saved sh. 108,000 more than Grace;

a) How much did they save altogether?

Total ratio  
 $5+4+2=11$

Then

$5-2=3$

3 parts ---- sh. 108,000

1 part ---- sh.  $\frac{108,000}{3}$

11 parts ---- sh.  $\frac{108,000}{3} \times 11$   
sh. 396,000  
36,000  
 $\times 11$   
396,000  
36,000  
 $\times 11$   
396,000  
(03 marks)

b) What amount did Ali save?

4 x  $\frac{36,000}{3}$

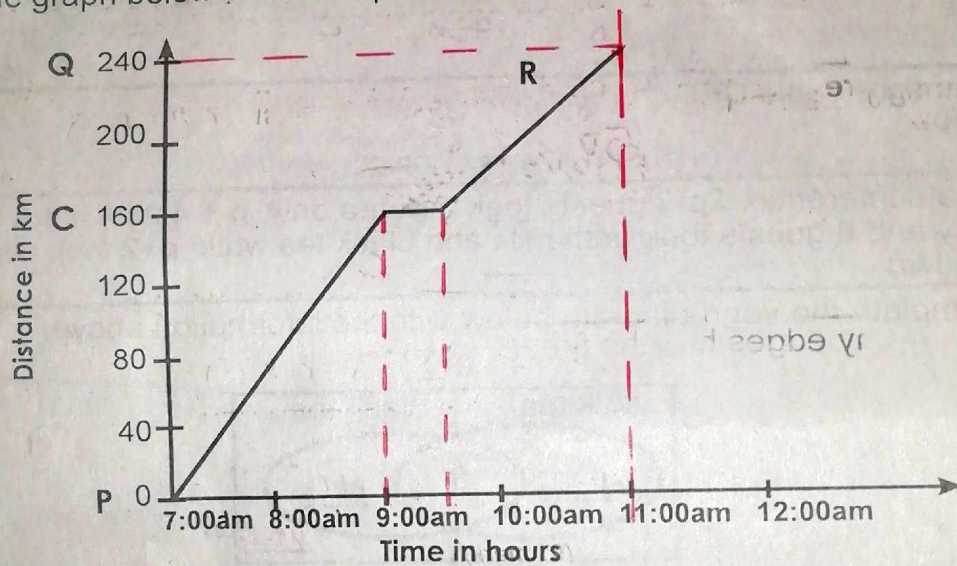
4 x 12,000

sh. 48,000

sh. 108,000

(02 marks)

26 The graph below shows ship R sailing from port P to port Q.



a) At what time did ship R reach its destination?

At 11:00 am

b) How long did the ship rest at C?

for 30 minutes

(02 marks)

(01 mark)

c) Calculate the average speed for ship R.

A speed =  $\frac{D}{T}$

$\frac{240 \text{ km}}{4 \text{ hr} + 1 \text{ hr} + 1 \text{ hr} + 1 \text{ hr}}$

1 hr + 1 hr + 1 hr + 1 hr

$\frac{240 \text{ km}}{4 \text{ hr}}$

60 km/hr

Average speed = 60 km/hr

(02 marks)



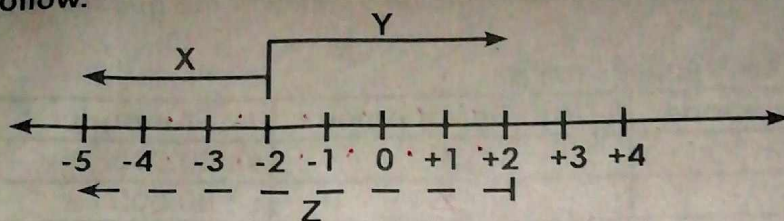
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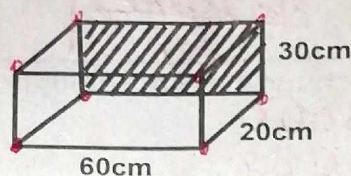
- 27 Given the number line below, use it to answer the questions that follow.



- a) Write the integer for each arrow.  
(i) X -3 (ii) Y +4 (iii) Z -1 (03 marks)

- b) Write a subtractional mathematical statement shown on the number line.  
 $X - Y = Z$  |  $-3 - 4 = -7$  (02 marks)

- 28 The figure below is a water tank. Use it to answer the questions that follow.



- a) How many edges has the figure?  
8 edges (01 mark)
- b) Work out the area of the shaded part.  
 $L \times W$   
 $A = 60\text{cm} \times 30\text{cm}$   
 $A = 1800\text{cm}^2$  (02 marks)

- c) How many litres of water can the tank hold when completely full?

$$\begin{array}{r} 2 \\ 18 \\ \times 3 \\ \hline 54 \end{array}$$

$$\begin{aligned} V &= L \times W \times H \\ V &= 60\text{cm} \times 20\text{cm} \times 30\text{cm} \\ V &= 1200\text{cm}^2 \times 30\text{cm} \\ V &= 36000\text{cm}^3 \end{aligned}$$

$$\begin{aligned} \text{Capacity} &= \frac{V}{1000\text{cm}^3} \\ \frac{36000\text{cm}^3}{1000\text{cm}^3} &= 36 \end{aligned}$$

$$\begin{aligned} \text{Capacity} &= 36 \text{ litres} \\ &= 36 \text{ litres} \end{aligned}$$

- 29 Solve for e:

$$e - 12 = 18$$

$$e - 12 = 18$$

$$e - 12 + 12 = 18 + 12$$

$$e = 30$$

$$\begin{array}{r} 18 \\ + 12 \\ \hline 30 \end{array}$$

- b) Sandra is 12 years older than Abdu. If their total age is 30 years, how old is each now?

Abdu	Sandra	Total
$x$	$x + 12$	30

$$x + x + 12 = 30$$

$$2x + 12 = 30$$

$$2x + 12 - 12 = 30 - 12$$

$$2x = 18$$

$$\frac{2x}{2} = \frac{18}{2}$$

$$x = 9$$

$$\begin{array}{r} \text{Abdu} \\ x \\ 9 \text{ years} \end{array}$$

$$\begin{array}{r} \text{Sandra} \\ x + 12 \\ 9 + 12 \\ 21 \text{ years} \end{array}$$





- 30 The table below shows different denominations Okello had before shopping. Study and use the information to answer the questions that follow.

a) Complete the blank spaces below.

Denominations	Number of notes	Amount
sh 20,000	3	sh 60,000
sh 10,000	<u>8</u>	sh 80,000
sh <u>5000</u>	5	sh 25,000
Total		sh <u>165,000</u>

$$\begin{array}{r}
 \text{sh. } 80,000 \\
 \text{sh. } 10,000 \\
 \hline
 8 \text{ notes}
 \end{array}
 \quad
 \begin{array}{r}
 \text{sh. } 25,000 \\
 \times 5 \\
 \hline
 \text{sh. } 125,000 \\
 \text{sh. } 5000 \\
 \hline
 \text{sh. } 130,000
 \end{array}
 \quad
 \begin{array}{r}
 \text{sh. } 60,000 \\
 \text{sh. } 80,000 \\
 \text{sh. } 25,000 \\
 \hline
 \text{sh. } 165,000
 \end{array}$$

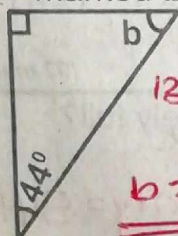
(03 marks)

- b) If Okello was given a change of sh. 5000, how much did he have?

$$\begin{array}{r}
 \text{sh. } 165,000 \\
 + \text{sh. } 5,000 \\
 \hline
 \text{sh. } 170,000
 \end{array}$$

(02 marks)

- 31(a) Work out the size of angle marked b.



$$\begin{array}{r}
 90^\circ + 44^\circ + b = 180^\circ \\
 134^\circ + b = 180^\circ \\
 134 - 134 + b = 180 - 134 \\
 b = 46^\circ
 \end{array}$$

(02 marks)

- b) Find the supplement of  $144^\circ$

$$\begin{array}{r}
 \text{let the supplement be } x \\
 x + 144^\circ = 180^\circ \\
 x + 144^\circ - 144^\circ = 180^\circ - 144^\circ \\
 x = 36^\circ
 \end{array}$$

supplement is  $36^\circ$  (02 marks)

- 32 Pupils sat mid-term examinations and scored the following marks; 70, 60, 40, 70, 50, 70 and 60.

- a) Find the median mark.

$$\begin{array}{c}
 40, 50, 60, 60, 70, 70, 70 \\
 \begin{array}{ccccccc}
 | & | & | & | & | & | & | \\
 \hline
 \end{array}
 \end{array}$$

Median = 60

- b) Calculate their mean mark.

$$\text{Mean} = \frac{\text{Sum of data}}{\text{No of data}}$$

$$(40 + 60) + (50 + 60) + (70 + 70) + 70$$

$$\begin{array}{r}
 310 + 280 \\
 \hline
 590
 \end{array}$$

(02 marks)

(03 marks)