



UNEB BLUE PRINT 2024 RE-MODERATED SET FOUR

MATHEMATICS

Time allowed: 2 Hours 15 Minutes

Random No.						Personal No.		

Candidate' Name:.....

Candidate's Signature:.....

District Name:.....

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. Answer **all** questions . all answers to both sections **A** and **B must** be written in the spaces provided.
5. **All** answers must be written using a **blue** or **black ball** point **pen** or **ink**. Diagrams should be drawn in a pencil.
6. **Unnecessary** changes in your work may 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 table indicated:
" **FOR EXAMINERS' USE ONLY**" and boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No	MARKS	EXR'S No.
1 – 10		
11 – 20		
21 – 22		
23 – 24		
25 – 26		
27 – 28		
29 – 30		
31 – 32		
TOTAL		

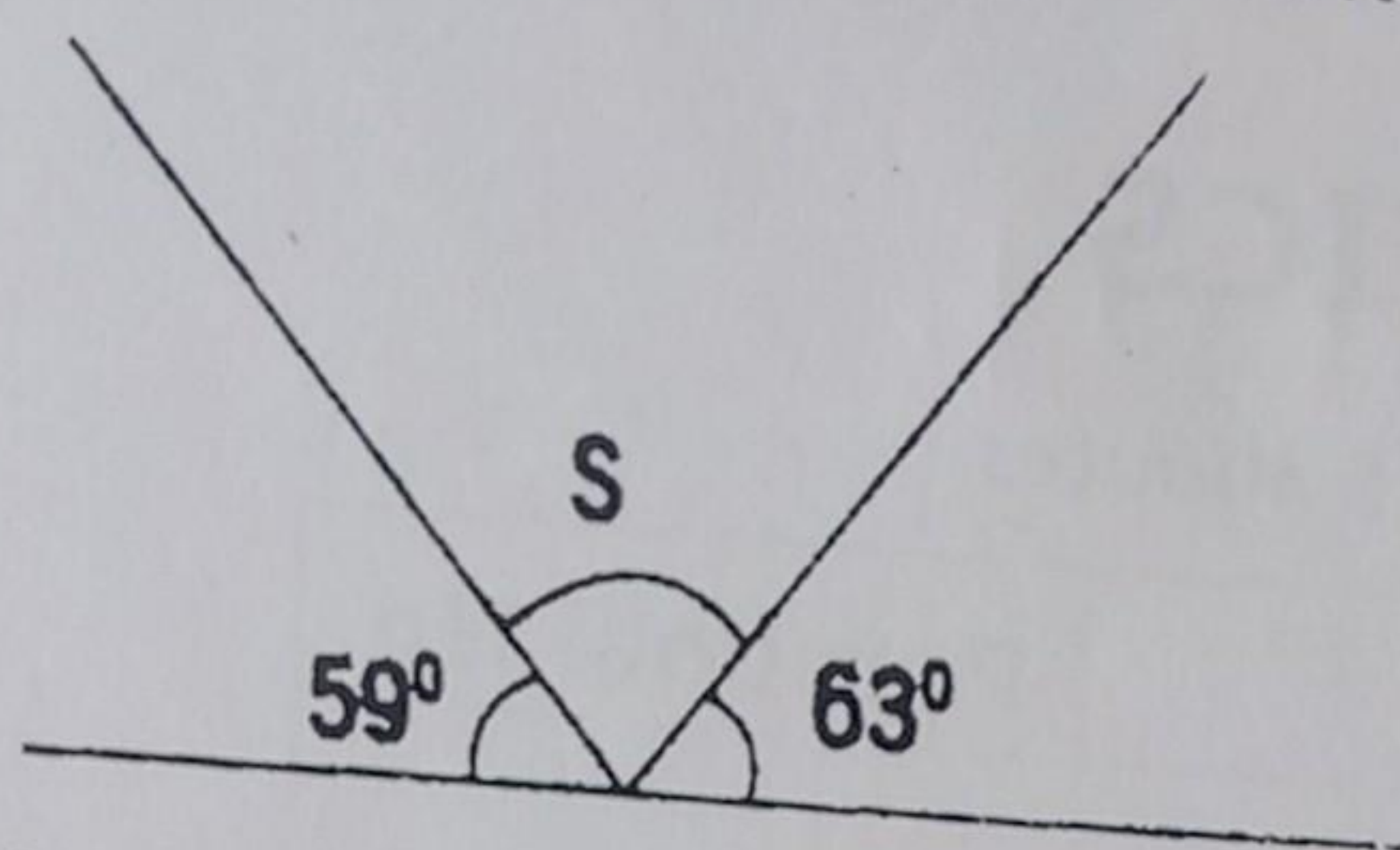
Turn Over

SECTION A (40 MARKS)

1. Add: $424 + 446$

$$\begin{array}{r} 424 \\ + 446 \\ \hline 870 \end{array}$$

2. Find the size of angle marked S in the figure below.



$$S + 59^\circ + 63^\circ = 180^\circ$$

$$S + 122^\circ = 180^\circ$$

$$S + 122^\circ - 122^\circ = 180^\circ - 122^\circ$$

$$S = 58^\circ$$

3. Opendi walked 2.3km from his home to his daughter's house. Express this distance in metres.

$$1\text{km} = 1000\text{m}$$

$$2.3\text{km} = \frac{23}{10} \times 1000\text{m}$$

$$2300\text{m}$$

4. Simplify: $5m - (2+m)$

$$5m - 2m$$

$$5m - m - 2$$

$$4m - 2$$

5. Multiply: 106×4

$$(100 \times 4) + (6 \times 4)$$

$$400 + 24$$

$$424$$

6. Solve: $4p - 8 = 16$

$$4p - 8 + 8 = 16 + 8$$

$$\frac{4p}{4} = \frac{24}{4}$$

$$p = 6$$

7. Multiply: $\frac{1}{2} \times \frac{1}{4}$

$$\frac{1}{2} \times \frac{1}{4} = \frac{1 \times 1}{2 \times 4}$$

$$\underline{\underline{\frac{1}{8}}}$$

8. Change 5 base ten to binary.

B	N	R
2	5	111
2	2	1
2	1	0
	0	1

$$\uparrow \quad \underline{5_{\text{ten}} = 101_{\text{two}}}$$

9. What is the complementary angle of 78° ?

$$90^\circ - 78^\circ$$

$$\underline{\underline{12^\circ}}$$

10. In a class of 60 pupils, 12 are boys. Express the number of boys as percentage number of the whole class.

$$\left(\frac{12}{60} \times 100 \right) \%$$

$$(2 \times 10) \%$$

$$20\%$$

11. If set $P = \{1, 2, 3, 4, 5\}$ and $P \cup Q = \{1, 2, 3, 4, 5, 6, 7, 8\}$ Find the number of elements in set Q only.

$$Q \text{ only} = \{6, 7, 8\}$$

$$\underline{\underline{n(Q) = 3}}$$

12. If: $\frac{6 \times 1}{6} x = 5$ find the value of x

$$\frac{6 \times 1}{6} x = 5$$

$$1$$

$$\underline{\underline{x = 5}}$$

13. Find the Lowest Common Multiple of 8 and 20.

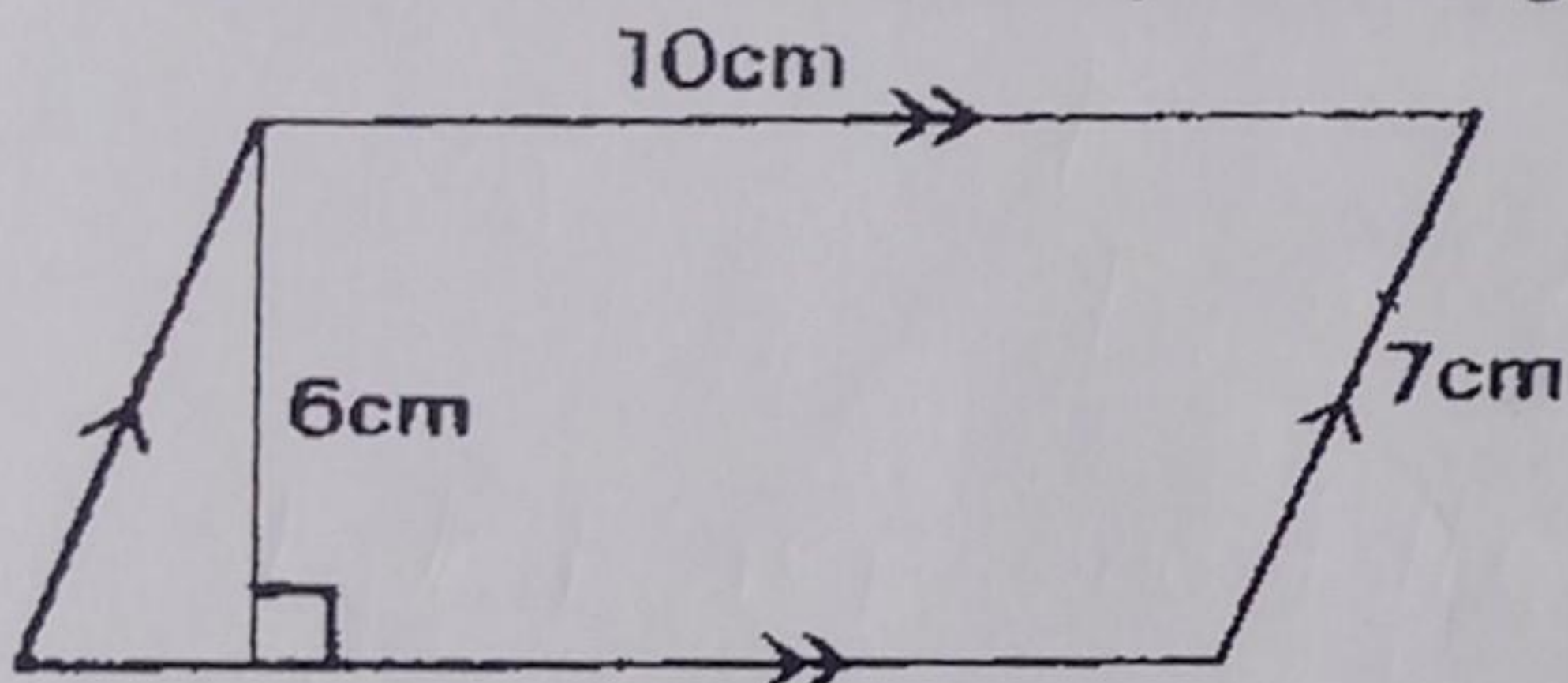
2	8	20
2	4	10
2	2	5
5	1	5
1	1	1

$$LCM = 2 \times 2 \times 2 \times 5$$

$$LCM = 8 \times 5$$

$$LCM = \underline{40}$$

14. Find the area of the parallelogram drawn below.



$$\text{Area} = b \times p.h$$

$$A = 10\text{cm} \times 6\text{cm}$$

$$A = \underline{60\text{cm}^2}$$

15. Rapha bought 4 exercise books at Shs8000. How much would he pay for 8 similar exercise books?

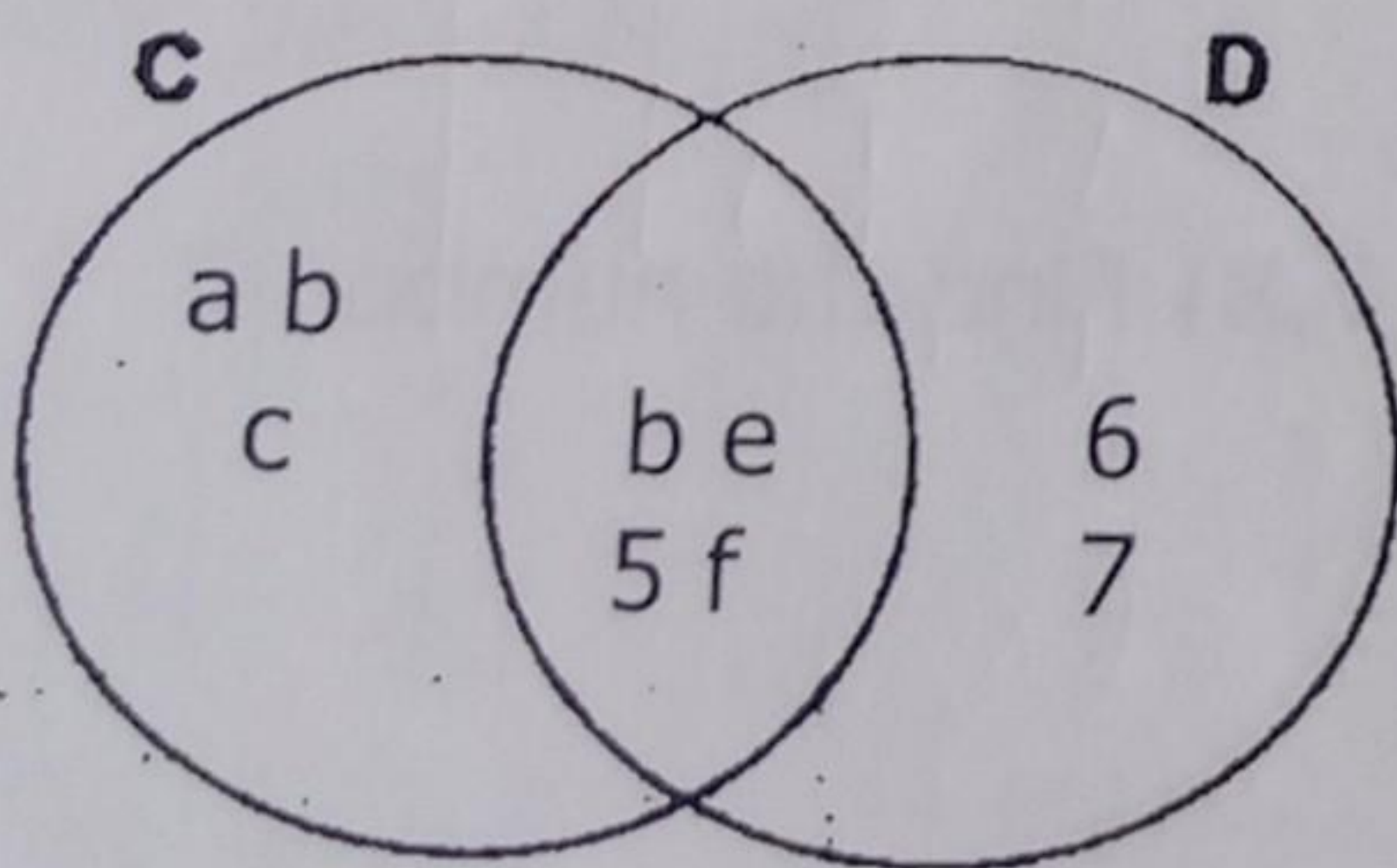
4 books cost sh.8000
1 book costs $\frac{\text{sh.8000}}{4}$

1 book costs sh.2,000

8 books cost sh.2,000 x 8

8 books cost sh.16,000

16. Use the Venn diagram below to find $n(C \cap D)$



$$C \cap D = \{b, e, 5, f\}$$

$$\underline{n(C \cap D) = 4}$$

17. Express $\frac{3}{5}$ in percentage.

$$\left(\frac{3}{5} \times \frac{100}{100} \right) \%$$

$$= (3 \times 20) \%$$

$$\underline{60\%}$$

18. Write 444,350 in words.

TH	Units
H T O 4 4 4	H T O 3 5 0

Four hundred forty-four thousand, three hundred fifty

19. Mawa bought a cow at shs600,000 then sold it at Shs1,000,000. What is his profit?

$$P = S.P - B.P$$

$$\begin{array}{r} \text{Shs } 1,000,000 \\ - \text{Shs } 600,000 \\ \hline \text{Shs } 400,000 \end{array}$$

20. The average age of 4 boys is 12 years. If one of them is 10 years old. What is the average of the other three boys?

$$\begin{array}{l} \text{Total age of 4 boys} \rightarrow (4 \times 12) \text{ years} \\ 48 \text{ years} \end{array}$$

$$\text{Average} = \frac{38}{3} \text{ r } 2$$

$$\begin{array}{r} \text{Total age of 3 boys} \rightarrow 48 \\ - 10 \\ \hline 38 \end{array}$$

$$\text{Average} = \underline{\underline{12\frac{2}{3} \text{ years}}}$$

SECTION B (60 Mks)

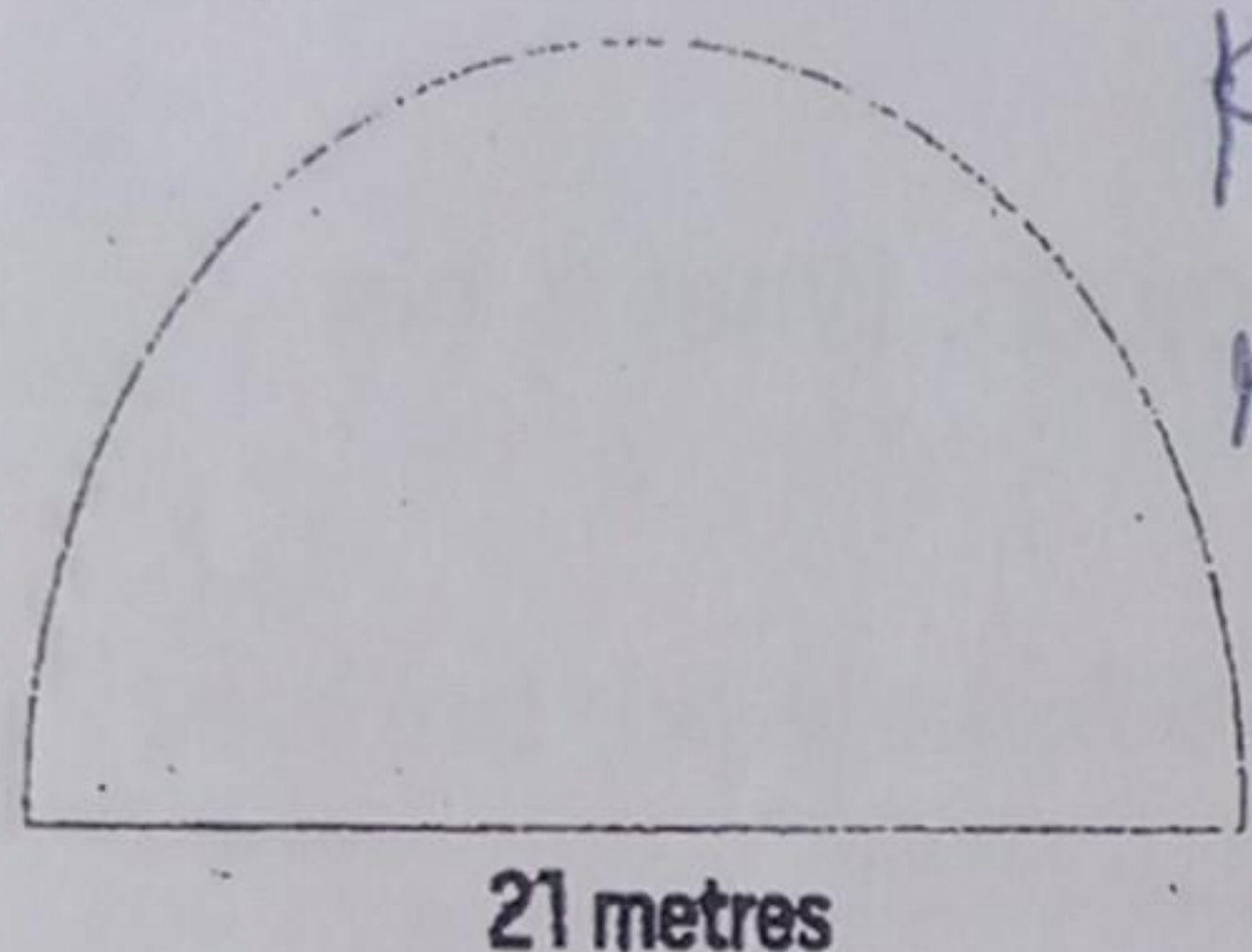
21. Iganga town's population has been declining slowly by slowly. In 2023 there were 500,000 residents, and there were only 467,000 residents in 2024. Work out the percentage decline of the population. (4mks)

$$\begin{array}{r} \text{Decrease} \rightarrow 500,000 \\ - 467,000 \\ \hline 33,000 \end{array}$$

$$\% \text{ decline} = \left(\frac{33,000}{500,000} \times 100 \right) \%$$

$$= \underline{\underline{6\frac{3}{5} \%}}$$

22. Jessy designed his flower garden in the form of a semi-circle below. Its diameter is 21 metres. How many trees can be planted round the garden at an interval of 180cm? (4mks)



$$P = \left(\frac{1}{2} \times \pi \times D\right) + D$$

$$P = \left(\frac{1}{2} \times \frac{22}{7} \times 21\text{m}\right) + 21\text{m}$$

$$P = 33\text{m} + 21\text{m}$$

$$P = 54\text{m}$$

$$1\text{m} = 100\text{cm}$$

$$54\text{m} = 54 \times 100\text{cm}$$

$$5400\text{cm}$$

No of trees

$$\frac{5400\text{cm}}{180\text{cm}} = \underline{\underline{30\text{ trees}}}$$

23.a) The sum of two numbers is 10. Their difference is 4. Find the two numbers. (3mks)

Let 'P' rep one of the nos

2nd no $\rightarrow 10 - P$

$$(10 - P) - P = 4$$

$$10 - P - P = 4$$

$$10 - 2P = 4$$

$$10 - 4 = 2P$$

$$\frac{6}{2} = \frac{2P}{2}$$

$$3 = P$$

$$P = 3$$

$$2^{\text{nd}} \text{ no} = 10 - 3$$

nos are; 3 and 7

1st no OR

$$\frac{10 - 4}{2}$$

$$\frac{6}{2} = 3$$

2nd no

$$10 - 3 = 7$$

3, 7

b) . Workout the lowest common Multiple of the two numbers. (2mks)

3	3	7
7	1	7
	1	1

$$3 \times 7 = \underline{\underline{21}}$$

24. In Sankara Junior school, there were 900 learners in year one, 520 learners in year 2 and 380 learners in year 3. Draw a circle graph to represent the number of learners in these groups. (5mks)

$$\begin{array}{r} \text{Total: } 900 \\ 520 \\ + 380 \\ \hline 1800 \end{array}$$

Year one	Year 3
$\begin{array}{r} 900 \times 2 \\ 1800 \times 360^\circ \\ \hline 180^\circ \end{array}$	$\begin{array}{r} 380 \times 2 \\ 1800 \times 360^\circ \\ \hline 76^\circ \end{array}$
Year 2	
$\begin{array}{r} 520 \times 2 \\ 1800 \times 360^\circ \\ \hline 104^\circ \end{array}$	

25. Study the extract of Irene's Bank Deposit slip below. Complete the table.

Denomination	Number of notes or coins	Amount
Ug sh. 50,000	4 notes	<u>Ugsh. 200,000</u>
Ug sh. 20,000	<u>15 notes</u>	Ug sh. 300,000
<u>Ugsh. 5,000</u>	3 notes	Ug. Sh. 15,000
Ug. Sh. 500	20 coins	<u>Ugsh. 10,000</u>

$$\text{Amount} = \text{Ugsh. } 50,000 \times 4 \quad \text{note}$$

$$\text{Ugsh. } 200,000$$

$$\begin{array}{r} \text{notes} = \frac{15}{300,000} \\ 20,000 \\ \hline 15 \text{ notes} \end{array}$$

$$\text{Amount} = \text{Ugsh. } 500 \times 20$$

$$\text{Ugsh. } 10,000$$

$$\text{Denomination} = \frac{5}{15,000} \\ 3,$$

$$\text{Ugsh. } 5,000$$

(4mks)

b) If Irene's account had Ug.Sh.103, 900 before deposit . Find the new amount on her bank account. (2mks)

$$\begin{array}{r}
 \text{Total amount} \rightarrow \text{Sh } 300,000 \\
 \text{Sh. } 200,000 \\
 \text{Sh. } 10,000 \\
 \text{Sh. } + 15,000 \\
 \hline
 \text{Sh. } 525,000
 \end{array}$$

$$\begin{array}{r}
 \text{New amount} \\
 \text{Ugsh. } 525,000 \\
 + \text{Ugsh. } 103,900 \\
 \hline
 \text{Ugsh. } 628,900
 \end{array}$$

26a) Which base five numeral is represented by 2 groups of five- five, 4 ones (1mk)

$$2 \times 10_{\text{five}} + 4 \times 1_{\text{five}}$$

$$200_{\text{five}} + 4_{\text{five}}$$

$$\begin{array}{r}
 200_{\text{five}} \\
 + 4_{\text{five}} \\
 \hline
 204_{\text{five}}
 \end{array}$$

$$204_{\text{five}}$$

b) Find the value of 4 in the number 47.777 (1mk)

$$47.\overset{1}{4}\overset{0}{7}.\overset{1}{7}\overset{1}{7}\overset{1}{7}$$

$$4 \text{ tens}$$

$$4 \times 10$$

$$40$$

c) How many pens are in 12.5 dozens ? (2mks)

$$1 \text{ dozen} = 12 \text{ pens}$$

$$12.5 \text{ dozens} = \left(\frac{25}{10} \times 12 \right) \text{ pens}$$

$$\begin{array}{r}
 25 \\
 \times 6 \\
 \hline
 150
 \end{array}$$

$$= 150 \text{ pens}$$

27a) The workers at Tubone Maize Millers Ltd have 3 sacks of maize flour weighing 90kg, 120kg and 150kg respectively. What is the mass of the biggest pack that can be used so that no flour remains in any of the sacks? (3mks)

GCF of 90kg, 120kg and 150kg

2	90	120	150
3	45	60	75
5	15	20	25
	3	4	5

$(2 \times 3) \times 5$

6×5

30 kg pack

b) The L.C.M of two numbers is 72. Find the second number if one of the number is 8 and GCF is 12. (2mks)

$$2^{\text{nd}} \text{ no} = \frac{\text{LCM} \times \text{GCF}}{8}$$

$$= \frac{72 \times 12}{8}$$

$$2^{\text{nd}} \text{ no} = 108$$

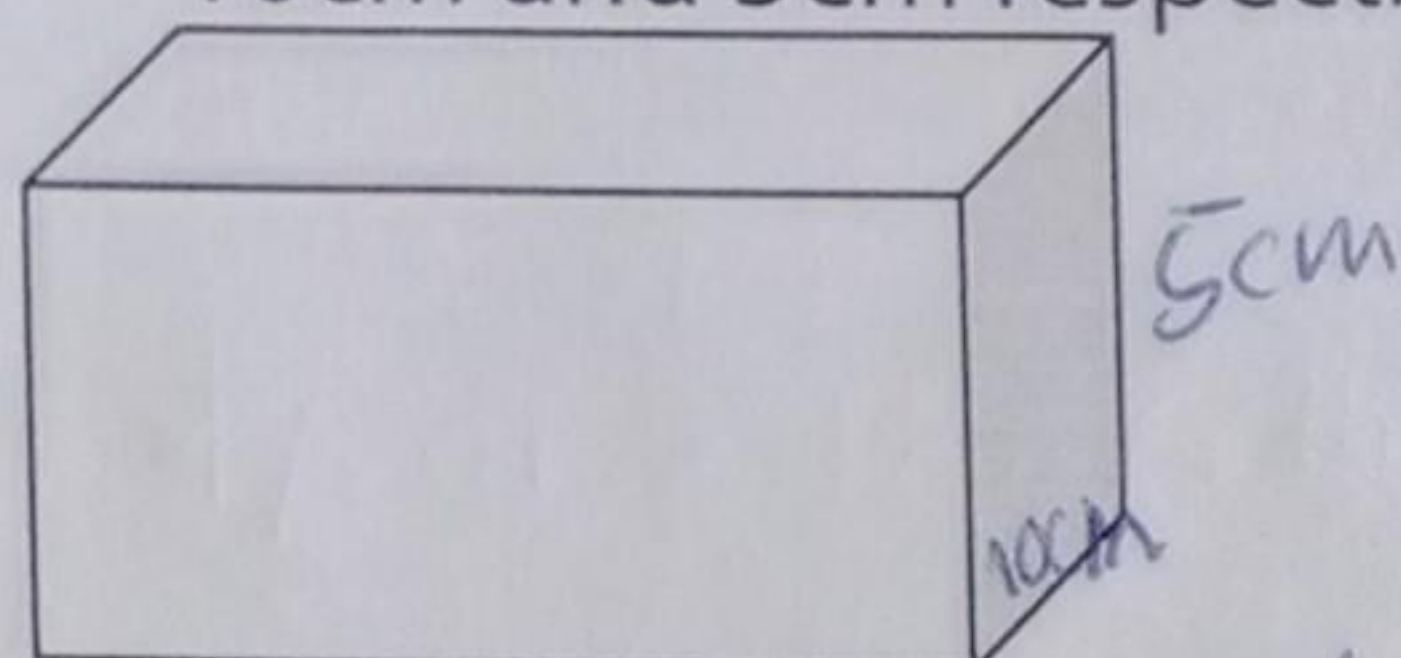
28a) Using a pair of compasses and a ruler, construct a square PQRS with diagonal PR = 8cm. (5mks)



b) Measure the length of PQ in centimetres.

(1mk)

29. The surface area of the figure below is 460cm². Its width and height are 10cm and 5cm respectively. Find the length of the prism. (5mks)



$$2Lw + 2Lh + 2wh = T.S.A$$

$$2 \times L \times 10 + 2 \times L \times 5 + 2 \times 10 \times 5 = 460$$

$$20L + 10L + 100 = 460$$

$$30L + 100 = 460$$

$$30L + 100 = 460 - 100$$

$$30L = 360$$

$$\frac{30L}{30} = \frac{360}{30}$$

$$L = 12$$

Length = 12cm

30. a) The interior angle sum of a regular polygon is 1260° How many triangles can be formed from the polygon? (2mks)

$$180^\circ(n-2) = \text{Int } \angle \text{sum}$$

$$\frac{180^\circ(n-2)}{180^\circ} = \frac{1260^\circ}{180^\circ}$$

$$n-2 = 7$$

$$n-2+2 = 7+2$$

$$n = 9 \text{ sides}$$

$$\text{No of triangles} = n-2$$

$$9-2 = 7$$

7 triangles

b) Calculate the size of each exterior angle. (3mks)

$$\text{Ext } \angle = \frac{360^\circ}{\text{No of sides}}$$

$$\frac{360^\circ}{9}$$

$$40^\circ$$

31. a) Nahiyah's is 20 year older than his son. In 10 years.
as old as the son. How old is the son?

Her father will be twice
(3mks)

Let 'm' rep Son's age

	Son	Nahiyah
Now	m	m+20
In 10 yrs	m+10	m+20+10

$$2(m+10) = m+20+10$$

$$2m+20 = m+30$$

$$2m-m = 30-20$$

$$m = 10 \text{ years}$$

The son is 10 years old.

b) Find the father's age in 10 years.

(2mks)

$$m+20+10$$

$$10+20+10$$

$$\underline{\underline{40 \text{ years.}}}$$

32. Mwesigwa saved money in Finance Trust Bank. He was offered shs1,500 monthly as interest. If he deposited sh. 2,300,500. How much did he have on his account after 5 years? (5mks)

$$1 \text{ year} = 12 \text{ months}$$

$$5 \text{ years} = (12 \times 5) \text{ months}$$

$$60 \text{ months}$$

Total interest

$$\text{Sh. } 1,500 \times 60$$

$$\text{Sh. } 90,000$$

$$\uparrow \text{ Total Amount} = P + I$$

$$\text{Sh. } 2,300,500$$

$$\text{Sh. } + 90,000$$

$$\hline \text{Sh. } 2,390,500$$

END