SUREKEY EXAMINATIONS BOARD

PRIMARY SIX QUALITY CHECK III

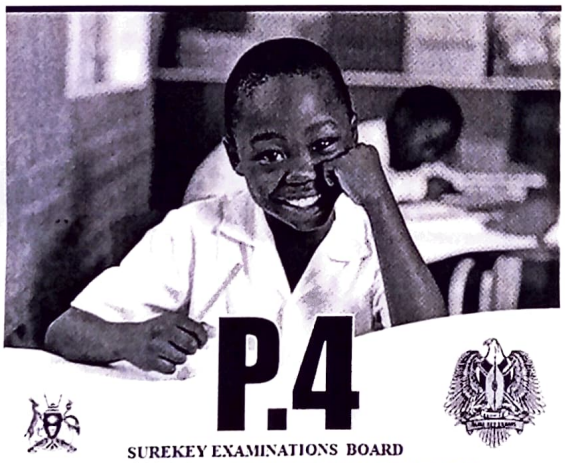
2023

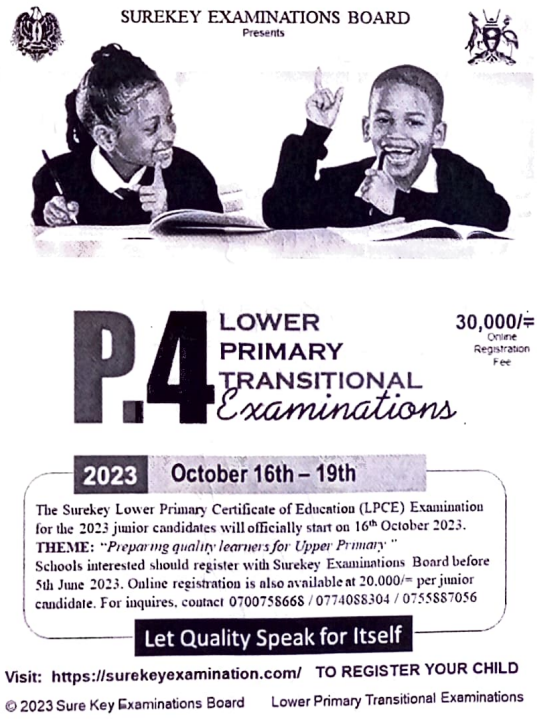
MATHEMATICS GUIDE

PREPARED BY:

MR. MUBIRU SULAIMAN: 0700 758668

MR. MUKISA BENJAMIN: 0754784870





"Don't speak for Quality, Let the Quality Speak for itself"

SECTION A: 40 MARKS

Answer **all** questions in this Section

Questions **1** to **20** carry two marks each

1. Workout: $305 \div 5$.

$$\begin{array}{r} 61 \\ 5\overline{)305} \\ 5 \\ \hline 1 \end{array}$$

$= 61$

OR

$$\begin{array}{r|l} & 061 \\ \hline 5 & 305 \\ 0\times5 & -0\downarrow \\ & 30 \\ 6\times5 & -30\downarrow \\ & 005 \\ 1\times5 & -5 \\ & 0\ 0 \end{array}$$

$= 61.$

2. Write in figures. Ten thousand two hundred six.

Ten thousand = 10,000
two hundred + 200
six + 6
10,206

Ten thousand two hundred six = 10,206

3. Given that P∪Q = {the first 10 counting numbers},
P∩Q = {Prime numbers between 2 and 10}
Q – P = {Even numbers between 1 and 8}.
List all members of P – Q.

$P \cup Q = \{1,2,3,4,5,6,7,8,9,10\}$

$P \cap Q = \{3,5,7\}$

$Q - P = \{2,4,6,8\}$

$P - Q = \{1,8,9,10\}$

4. Deborah scored $\frac{8}{10}$ in a test. Express Deborah's score as a percentage.

$\frac{8}{10} \times 100^{\circ}/_{0}$

$(8 \times 10)^{\circ}/_{0}$

$80^{\circ}/_{0}$

5. Simplify $8 + 8 \div 8$.

$8 + (8 \div 8)$

$8 + 1$

$= 9$

6. What number has been expanded to give;

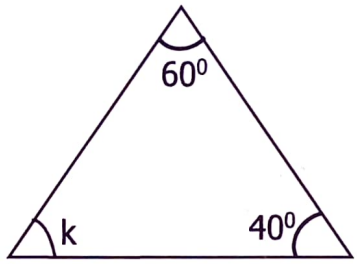
$(8 \times 10^2) + (3 \times 10^0) + (5 \times 10^{-2})$

$(8 \times 100) + (3 \times 1) + \left(5 \times \frac{1}{100}\right)$

$$\begin{array}{r} 800 \\ 3 \\ +\quad 0.05 \\ \hline 803.05 \end{array}$$

∴ 803.05 has been expanded.

7. In the figure below. Find the value of **k** in degrees.



$K + 60^\circ + 40^\circ = 180^\circ$

$K + 100^\circ = 180^\circ$

$K + 100^\circ - 100^\circ = 180^\circ - 100^\circ$

$K = 80^\circ$

8. How many groups of 100 can be got from the value of 8 in the number 28479?

TTH	TH	H	T	O
2	8	4	7	9

Value of 8

= 8 × 1000

= 8000

Groups of 100

$= \frac{8000}{100}$

= 80 groups

9. Workout the square root of 0.36.

$\sqrt{0.36}$

$\sqrt{\frac{36}{100}}$

2	36	2	100
2	18	2	50
3	9	5	25
3	3	5	5
	1		1

$\sqrt{\frac{36}{100}} = \frac{\sqrt{(2 \times 2) \times (3 \times 3)}}{\sqrt{(2 \times 2) \times (5 \times 5)}}$

$\sqrt{0.36} = \frac{2 \times 3}{2 \times 5}$

$\sqrt{0.36} = \frac{6}{10}$

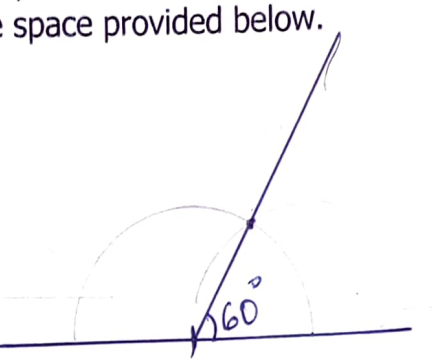
$\sqrt{0.36} = 0.6$

10. Using a pair of compasses, a ruler and a sharp pencil only, construct the complement of 30^0 in the space provided below.

Complement.

$90^\circ - 30^\circ$

$= 60^\circ$



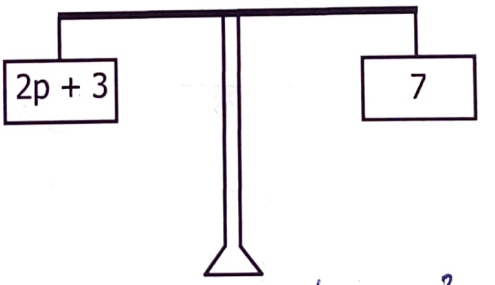
11. The probability that Julius will pass the exams is 0.6. What is the probability that Julius will fail the exams?

$1 - 0.6$

$= 0.4$

Probability of failing $= 0.4$

12. Study the diagram below and use it to find the value of **p**.



$2p + 3 = 7$

$2p + 3 - 3 = 7 - 3$

$2p = 4$

$\frac{2p}{2} = \frac{4}{2}$

$p = 2$

13. On a certain day, Agnes sold 5000 millilitres of milk from the 20 litre Can she was given to sell. How many litres of milk remained in the Can?

1000ml = 1L

5000mL = 5000 / 1000

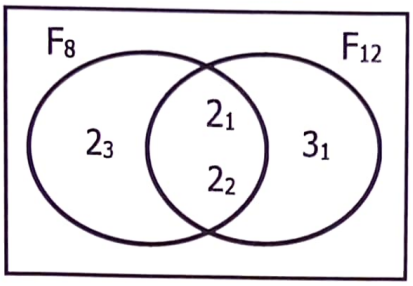
= 5 litres

Litres that remained

(20 - 5) litres

15 litres

14. Use the Venn diagram below to find the LCM of F_8 and F_{12}.



LCM = (2 x 2) x (2 x 3)
= 4 x 6
= 24

15. During a church service, a pastor read the Bible in the book of Genesis from page 8 to page 15. How many pages did the pastor read?

(15 - 8) + 1
7 + 1
= 8 pages

The Pastor read 8 pages

16. In a class of 20 pupils, $\frac{2}{5}$ of them are absent. How many pupils are present?

Fraction of present.

$\frac{5}{5} - \frac{2}{5} = \frac{3}{5}$

Pupils present

$\frac{3}{5_1} \times \frac{4}{20}$

3 x 4
= 12 pupils

17. Seven books cost sh.4,900. Find the cost of 5 similar books.

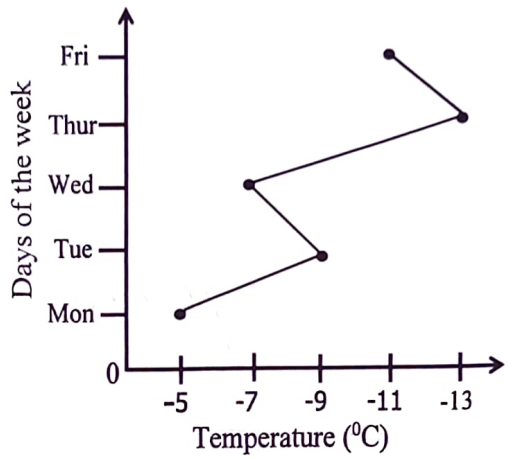
7 books = sh. 4900
1 book = sh. $\frac{4900}{7_1}$
sh. 700
5 books = 5 x 700
= sh. 3500.

18. Workout: $\frac{3}{7} - \frac{2}{5}$. LCM = 35

$= \frac{15 - 14}{35}$

$= \frac{1}{35}$

19. The graph below shows the weekly classroom temperatures that were recorded by the P.7 learners.



Workout the classroom temperature range during that week.

Range = H - L
= +13 + 5
Highest = -5
Lowest = -13

Range = -5 (+) 13
= -5 + 13
Range = 8°C

20. Calculate the area of a circle whose radius is 28cm. (Use $\pi = \frac{22}{7}$)

Area = πr^2
= $\frac{22}{7} \times \cancel{28}^{4} \times 28$
= $22 \times 4 \times 28$
= 44×28
Area = $1,232 cm^2$

SECTION B: 60 MARKS

Answer **all** questions in this section

Marks for each question are indicated in brackets.

21. (a) Express 13_{ten} to binary base. (02 Marks)

B	N	R
2	13	1
2	6	0
2	3	1
	1	

$\therefore 13_{ten} = 1101_{two}$

(b) Given that $31_p = 41_{six}$. Find the value of P (03 Marks)

$(3\times P^1)+(1\times P^0) = (4\times 6^1)+(1\times 6^0)$

$3P + 1 = 24 + 1$

$3P + 1 = 25$

$3P + 1 - 1 = 25 - 1$

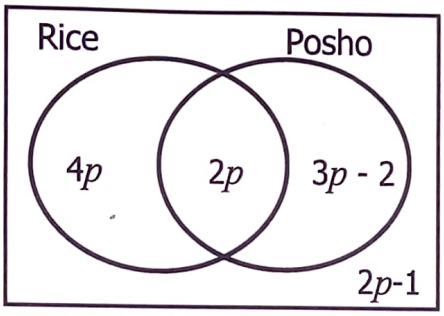
$3P = 24$

$\frac{3P}{3} = \frac{24}{3}$

$P = 8$

P = base eight.

22. The Venn diagram below shows the number of pupils who eat different types of food at Villa Road Primary School, Masaka .



(a) Given that 17 pupils dislike rice, find the value of p. (02 Marks)

$3p-2+2p-1 = 17$

$3p+2p-2-1 = 17$

$5p - 3 = 17$

$5p - 3 + 3 = 17 + 3$

$\frac{5p}{5} = \frac{20}{5}$

$p = 4$

(b) How many pupils like rice but not posho? (01 Mark)

$4p$

$= 4\times 4$

$= 16$ pupils

(c) How many pupils dislike posho? (02 Marks)

$16 + 2p - 1$

$16 + 2(4) - 1$

$16 + (8 - 1)$

$16 + 7$

$= 23$ pupils.

23. Andrew went shopping and bought the following items as shown in the table below.

(a) Complete the table below. (04 Marks)

Item	Qty	Unit cost	Total cost
Sugar	$1\frac{1}{2}$kg	Sh. 3000	Sh. 4500
Rice	3kg	Sh. 3500	Sh. 10500
Milk	4 litres	Sh. 2000	Sh. 8000
Total Expenditure			Sh. 23000

Sugar
1500
3000 × 3/2,
= 1500 × 3
= 4500 /=

Rice
3500
+500
3,
= 3500 /=

Milk.
sh. 23000 (4500 + 10500)
sh. 23000 − 15000
sh. 8000

2
8000
4k
= sh. 2000

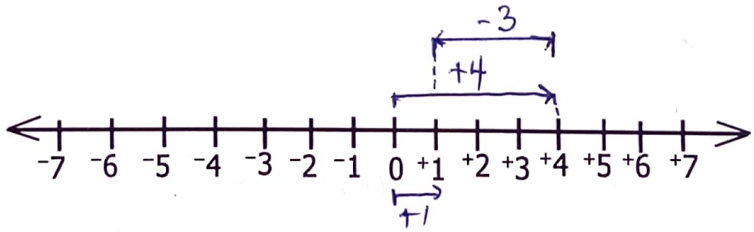
(a) If he had three notes of sh.10,000. How much was her change. (01 Mark)

3 × 10,000
= 30,000 /=

Change
2
sh. 30,000
− sh. 23000
sh. 7,000

Herchange was
sh. 7000.

24. (a) On the numberline below, workout $^{+}4 + {}^{-}3$. (03 Marks)



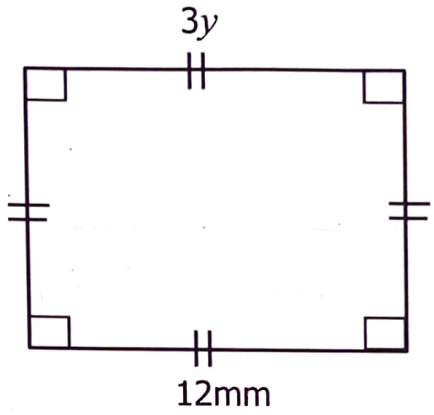
$+4 + {}^{-}3 = {}^{+}1$

(b) If today is Friday, what day of the week will it be after 24 days? (02 Marks)

$5 + 24 = \_ \pmod 7$
$29 = \_ \pmod 7$
$29 \div 7 = 4 \text{ r } 1$
$= 1 \pmod 7$

It will be a Monday.

25. Study the figure below and use it to answer questions that follow.



(a) Find the value of y. (02 Marks)

$3y = 12$

$\frac{3y}{3} = \frac{12}{3}$

$y = 4mm$

(b) Find the area of the figure above. (02 Marks)

Area = L x W / S x S

$= 12 \times 12$

$= 144mm^2$

(c) Calculate the perimeter of the figure. (02 Marks)

$P = 4S$

$= 4 \times 12$

$= 48mm$

$P = S + S + S + S$

$= (12+12)+(12+12)$

$= 24 + 24$

$= 48mm$

26. Josephine a juice seller sold 60 litres of juice in 3 days. Each day she sold 2 more litres than the previous day. How many litres of juice did she sell on each of the 3 days? (04 Marks)

Let the first day be y

1st day = y

2nd day = y+2

3rd day = y+4

Total = 60litres

$y+y+2+y+4 = 60$

$3y+6 = 60$

$3y+6-6 = 60-6$

$3y = 54$

$\frac{3y}{3} = \frac{54}{3}$

$y = 18$

1st day = y

= 18 litres

2nd day = y+2

= 18+2

= 20 litres

3rd day = y+4

= 18+4

= 22 litres

27. In a 10km Marathon race that started at 9:00a.m, James crossed the finishing line after running for $2\frac{1}{2}$ hours.

(a) At what time did James cross the finish line? (02 Marks)

9 : 00 a.m
+2 30
11 : 30 a.m.

He crossed the finishing line at 11:30a.m.

(b) Calculate his average speed for the whole Marathon. (02 Marks)

Speed = T.D.C / T.T.T

$= 10 \div 2\frac{1}{2}$

$= 10 \div \frac{5}{2}$

$= 10 \times \frac{2}{5}$

$= 2 \times 2$

$= 4$ km/hr.

28. The table below shows marks scored by pupils in a weekly test.

Marks scored	80	70	55	75
No. of pupils	3	2	1	4

(a) How many pupils did the test? (01 Mark)

(3 + 2) + (1 + 4)
5 + 5
= 10 pupils

(b) How many pupils scored above the mean mark? (03 Marks)

Mean = Total / No

$= \frac{(80 \times 3) + (70 \times 2) + (55 \times 1) + (75 \times 4)}{10}$

$= \frac{735}{10}$

$= 73.5$

4 + 3
= 7

7 pupils scored above the mean mark.

(c) Find the modal mark of the pupils. (01 Mark)

75

29. Edmond spends $\frac{1}{2}$ of his salary on transport, $\frac{1}{4}$ on school fees and banks the rest.

(a) What fraction of his salary does he spend? (02 Marks)

$\frac{1}{2}+\frac{1}{4}$

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

$=\frac{3}{4}$

(b) What fraction does he bank? (02 Marks)

$\frac{4}{4}-\frac{3}{4}$

$=\frac{1}{4}$

(c) If he earns Sh.450,000 monthly, how much does he bank? (02 Marks)

$=\frac{1}{\cancel{4}_1} \times \cancel{450,000}^{112,500}$

$=112,500/=$

He banks 112,500/=

30. A mother is three times as old as his son. If their total age is 48 years.

(a) How is old is the son? (03 Marks)

Let the son's age be y

Son $=y$

Mother $=3y$

Total $=48$

$y+3y=48$

$4y=48$

$\frac{\cancel{4}y}{\cancel{4}_1}=\frac{48}{\cancel{4}_1}$

$y=12$

Son $=y$

$=12$ years

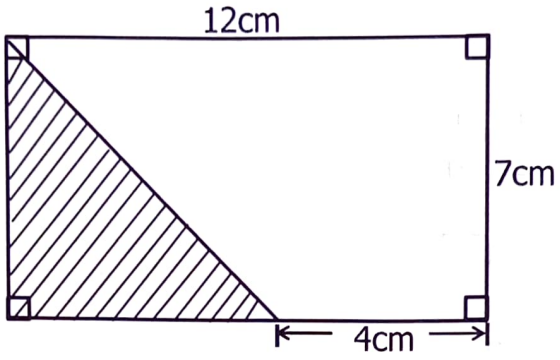
(b) How old is the mother? (02 Marks)

$3y$

3×12

$=36$ years.

31. Study the figure below and use it to answer the questions that follow.



(a) Find the area of the shaded part. (03 Marks)

Base
12 − 4
= 8cm

Area = $\frac{1}{2} \times b \times h$
$= \frac{1}{2} \times 8 \times 7$
$= 4 \times 7$
$= 28 cm^2$

Area = $28 cm^2$

(b) Find the area of the unshaded part. (03 Marks)

Area of the □
A = L x W
A = 12 x 7
A = $84 cm^2$

Area of unshaded part.
$(84 - 28) cm^2$
$= 56 cm^2$
OR use formula for the trapezium,

$A = \frac{1}{2} h(a+b)$
$A = \frac{1}{2} \times 7 (4 + 12)$
$A = \frac{1}{2} \times 7 \times 8$
$A = 7 \times 8$
$A = 56 cm^2$

32. (a) A factory packs 40 boxes of pens in a carton. Each box contains 50 pens. How many pens are in a carton? (02 Marks)

1 box = 50 pens
40 boxes = 40 x 50
= 2000 pens.

(b) Workout 456 x 12 using the lattice method. (02 Marks)

	4	5	6	
0	0/4	0/5	0/6	1
5	0/8	1/0	1/2	2
	4	7	2	

= 5472

END