THE E-LEARN EXAMINATIONS BOARD

WELCOME TO PRIMARY SEVEN

2024

MATHEMATICS GUIDE

Time Allowed: 2 hours 15 minutes

Index No.	EMIS No.						Personal No.		

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Read the following instructions carefully:

1. Do not forget to write your **school** or **district name** on the paper.
2. This paper has two sections: **A** and **B**. Section **A** has **20** questions and section **B**has **12** questions. The paper has **14** printed pages altogether.
3. Answer **all** questions. **All** working for both sections **A** and **B** must be shown in the spaces provided.
4. **All** answers **must** be written using a **blue** or **black** ball point pen or ink. Any work written in pencil will **not** be marked.
5. Unnecessary **changes** in your work and handwriting that cannot be read easily may lead to **loss of marks**.
6. 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 – 5		
6 – 10		
11 – 15		
16 – 20		
21 – 22		
23 – 24		
25 – 26		
27 – 28		
29 – 32		
TOTAL		

SECTION A: 40 MARKS

Answer all questions in this section

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

1. **Add:** 98 + 12

$$\begin{array}{r} 9\ 8 \\ +1\ 2 \\ \hline 11\ 0 \end{array}$$

2. The cost of **6** exercise books is **Shs. 2400**. Find the cost of **5** similar exercise books.

6 exercise books ⟶ Sh.2400

1 exercise book ⟶ Sh. $\frac{\overset{400}{\cancel{2400}}}{\cancel{6}_1}$

5 exercise books ⟶ Sh. 400 X 5

= Sh. 2,000

3. Find the average of **2, 1, y + 3, 4y** and **4**.

$$\text{Average} = \frac{\text{Sum of items}}{\text{No. of items}}$$

$$= \frac{2+1+4+y+3+4y}{5}$$

$$= \frac{7+3+y+4y}{5}$$

$$\text{Average} = \frac{10+5y}{5}$$

$$= \frac{\cancel{10}^{2}}{\cancel{5}_{1}} + \frac{\cancel{5}^{1}y}{\cancel{5}_{1}}$$

$$= 2+y$$

4. What number can be divided by either **6** or **8** leaving **1** as a remainder?

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

= 2x2x2x3

LCM = 24

24 + 1

= 25

Method 2

M_6 = {6,12,18,24, 30, ...}

M_8 = {8,16,24, ...}

LCM =24 + 1

Number 24 + 1

= 25

5. Write in numerals. **"Three hundred three thousand, three hundred"**.

3 0 3, 0 0 0

\+ 3 0 0

3 0 3, 3 0 0

6. In a bag, there are **6** blue balls and **7** white balls. What is the probability of picking a white ball?

Total number of balls = 6 + 7

= 13 balls

Probability = $\frac{n(E)}{n(S)}$

= $\frac{7}{13}$

7. Find the **G.C.D** of **8** and **12.**

2	8	12
2	4	6
	2	3

G.C.D = 2 X 2

= 4

Method 2

$F_8 = \{1,2,3,4,8\}$

$F_{12} = \{1,2,3,4,6,12\}$

C.F = $\{1,2,4\}$

G.C.D = 4

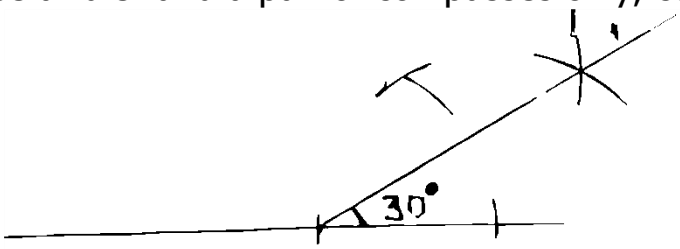
8. Ashley shared **2727** cabbages among **9** visitors. How many cabbages did each visitor get?

$$\text{Average} = \frac{^{3}0\,^{3}}{2\,7\,2\,7}\ \text{Cabbages}$$
$$\frac{}{9_1}$$

= 303 Cabbages

Each visitor got 303 cabbages

9. Use a ruler and a pair of compasses only, construct an angle of $\mathbf{30^0}$.



10. Solve: $\mathbf{2}x^2 = \mathbf{50}$

$$\frac{^{1}2x^2}{2_1} = \frac{50}{2_1}$$

$x^2 = 25$

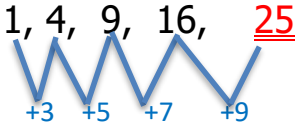
$\sqrt{x^2} = \sqrt{25}$

$\sqrt{x} \times \sqrt{x} = \sqrt{5} \times \sqrt{5}$

$x = 5$

11. What is the next number in the series?

1, 4, 9, 16, 25



1, 4, 9, 16, 25

1^2 2^2 3 4^2 $5^2 = 5 \times 5$

12. Given that set B = {a, b, c, d}

and set C = {0, 2, 4, 6}

Find **n(B ∪ C)**

B ∪ C= {a, b ,c, d, 0, 2, 4, ~~6~~}

n(B ∪ C) = 8

13. In a class of **40** pupils, 16 are boys, what percentage of the class are girls?

Number of girls

4 0

-1 6

2 4

Percentage of girls

$\frac{24^{6}}{40_{1}} \times 100$

= 60%

14. Express **40m/sec as km/hr**.

$$\text{Speed} = \frac{D}{T}$$

$$\left\{ \frac{40}{1000} \div \frac{1}{3600} \right\} \text{ Km/h}$$

$$\left\{ \frac{40}{1000} \times 3600 \right\} \text{ Km/h}$$

= 144 Km/hr

15. A right – angled trapezium has its opposite parallel sides **15cm** and **10cm** and a height of **8cm**. Find its area.

$$\text{Area} = \frac{1}{2} h(a+b)$$

$$= \frac{1}{2_1} \times \cancel{8}^{4}\text{cm}\ (15\text{cm} + 10\text{cm})$$

$$4\text{cm} \times 25\text{ cm}$$

$$= 100\ \text{cm}^2$$

16. Change $\mathbf{433_{six}}$ to the day – today base

2	1	0
4	3	3

six

$$=(4 \times 6^2) + (3 \times 6^1) + (3 \times 6^0)$$

$$=(4 \times 6 \times 6) + (3 \times 6) + (3 \times 1)$$

$$= 144 + 18 + 3$$

$$= 165_{ten}$$

17. Work out: 5 – 6 = ___(mod 8)

$$(5 + 8) - 6 = \_\_\_\_\_ (\text{mod } 8)$$

$$13 - 6 = \_\_\_\_\_ (\text{mod } 8)$$

$$5 - 6 = 7\ (\text{mod } 8)$$

18. If **a = 2, b= 3** and **c = 5**, find the value of **3a + b + c**

$$3a + b + c$$

$$(3 \times a) + 3 + 5$$

$$(3 \times 2) + 8$$

$$= 14$$

Turn Over

19. Simplify: $^{-}8 - {}^{-}2$

$^{-}8 - (-2)$

$-8 + 2$

$= {}^{-}6$

20. Increase **Sh. 10,000** in the ratio **2:5**.

$\frac{5}{2_1}$ X Sh. ~~10,000~~

5 X Sh. 5,000

Sh. 25,000

SECTION B: 60 marks

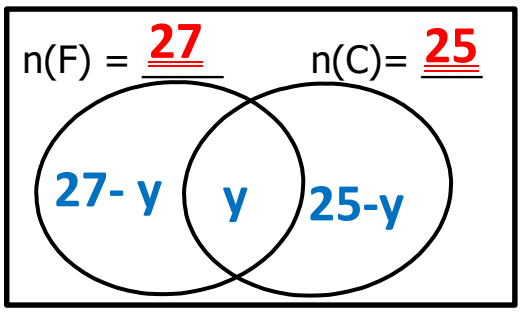
Answer all questions in this section

Marks for each question are indicated in the brackets

21. In a class of 50 pupils, 27 like Fanta (F), 25 like Coca-Cola (C), Y like both Fanta and Coca-Cola.

a) Represent the information on the Venn diagram below.

n(∈) = 50 *(2mks)*



b) Find the value of y. *(2mks)*

$27-y+y+25-y = 50$

$27+25-y = 50$

$52-y = 50$

$52-52-y = 50-52$

$Y = -2$

$\frac{-y}{-1} = \frac{-2}{-1}$

$Y = 2$

c) Find the number of pupils who took only one type of soda. *(2 mark)*

$(27-y) + (25-y)$

$(27-2) + (25-2)$

$25 + 23$

$= 48$ pupils

22. Nambirige scored the following marks in End of year examinations.
Maths 90, English 80, Science 80, S.ST 70, French 60

a) Find the following

i) Range *(1mk)*

Range = Highest - Lowest

90 marks – 60 marks

9 0 marks

-6 0 marks

3 0 marks

ii) median *(2mks)*

Median = 60, 70, 80, 80, 90

80 marks

iii) modal frequency *(1mk)*

mark	60	70	80	90
frequency	1	1	2	1

The modal frequency is 2

iv) Average mark *(2mks)*

$$\text{Average} = \frac{\text{Sum of items}}{\text{No. of items}}$$

$$= \frac{60+70+80+80+90}{5}$$

$$= \frac{380^{76}}{\cancel{5}_{1}}$$

Average= 76 marks

23. Father bought the following items from the market.

- 4kg of sugar at Shs. 5500 per kg
- 2½ kg of salt at Shs. 1200 per kg
- 2 bars of soap at Shs. 6000 per bar
- $\frac{1}{2}$kg of ground nuts at shs. 5000 @kg

a) Calculate his total expenditure. *(4mks)*

Sugar = Sh. 5,500 X 4
= Sh. 22,000

Soap = Sh. 6,000 X 2
= Sh. 12,000

Ground nuts
$\frac{1}{2}$ X $\cancel{5,000}^{2500}$
$\cancel{2}_{1}$
1XSh. 2,500
= Sh. 2,500

Salt
$\frac{5}{2}$ X $\cancel{100}^{600}$
$\cancel{2}_{1}$
5XSh. 600
= Sh. 3,000

Total expenditure

	Sh. 2 2, 000
	Sh. 1 2, 000
+	Sh. 2, 500
	Sh. 3, 000
	Sh. 3 9, 500

b) If he remained with a change of Shs. 10,500, how much had he at first? *(1mk)*

Sh. 3 9, 500
\+ Sh. 1 0, 500
Sh. 5 0, 000

24.a) Work out: $\frac{3k}{5} = 3$ *(2mks)*

LCD = 5

$$\frac{{}^{1}\cancel{5}X\,3K}{\cancel{5}_{1}} = 3X5$$

$$3K = 15$$

$$\frac{{}^{1}\cancel{3}K}{\cancel{3}_{1}} = \frac{\cancel{15}^{5}}{\cancel{3}_{1}}$$

$$K = 5$$

b) **Simplify:** $\frac{a^5 + a^3}{a^4}$

$a^{(5+3)}$

a^4

a^8

a^4

$a^{(8-4)}$

a^4

Method 2

$$\frac{\cancel{a}^{1} \times \cancel{a}^{1} \times \cancel{a}^{1} \times \cancel{a}^{1} \times a \times a \times a \times a}{\cancel{a}^{1} \times \cancel{a}^{1} \times \cancel{a}^{1} \times \cancel{a}^{1}}$$

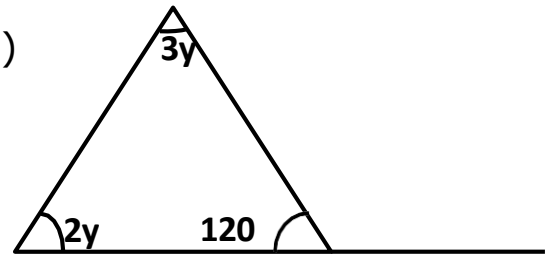
$a \times a \times a \times a$

a^4

25. Find the value of the un known angles.

(*3mks*)

a)



$2y+3y+120 = 180^0$

$5y+12^0 = 180^0$

$5y+120^0-120^0 = 180^0-120^0$

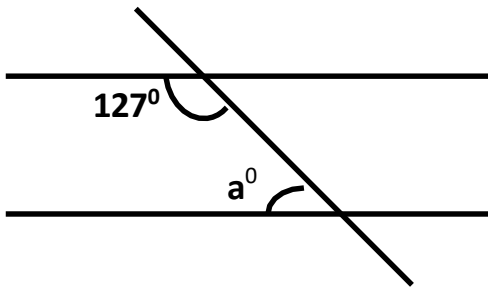
$5y = 60^0$

$\frac{{}^{1}\cancel{5}y}{\cancel{5}_{1}} = \frac{\cancel{60}^{12}}{\cancel{5}_{1}}$

$Y = 12^0$

(*2MKS*)

b)



$a^0+127^0 = 180^0$

$a^0+127^0 = 180^0-127^0$

$\frac{a^{\cancel{0}}}{1^{\cancel{0}}} = \frac{53^{\cancel{0}}}{1^{\cancel{0}}}$

$a = 53$

26. (a) The probability that Jose picks a red colour is $\frac{1}{3}$
What is the probability that Jose picks another colour? *(2mks)*

$$1 - \frac{1}{3}$$

$$\frac{3}{3} - \frac{1}{3}$$

$$= \frac{3-1}{3}$$

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

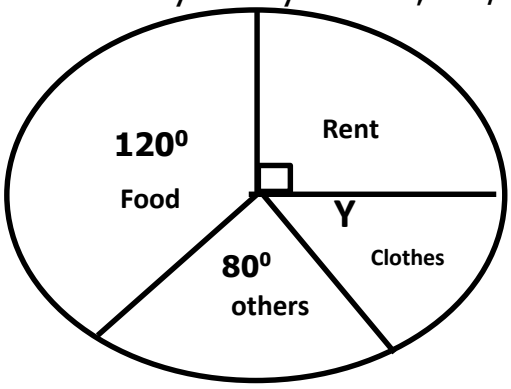
(b) Toss a dice once. What is the probability that an odd number shows up? *(2mks)*

S.S = {1, 2, 3, 4, 5, 6}
Events = {1, 3, 5}

$$\text{Probability} = \frac{n(e)}{n(ss)}$$

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

27. Muganza spends his monthly salary of 720,000/= as shown on the pie chart below.



a) Find the value of y in degrees. *(2mks)*

$$y+80^0+120^0+90^0 = 360^0$$
$$y+290^0 = 360^0$$
$$y+290^0 - 290^0 = 360^0-290^0$$
$$\underline{y = 70^0}$$

b) How much does he spend on food? *(2mks)*

$$\frac{^{1}\cancel{120}}{\cancel{360}^{0}_{3}} \times \text{sh. } \cancel{720,000}^{240,000}$$

Sh. 240,000

c) What fraction does he spend on others in its lowest term? *(1mk)*

$$\frac{^{2}\cancel{80}^{0}}{\cancel{360}^{0}_{9}}$$

$$\frac{2}{9}$$

28. Two bells ring together at **40** minutes and **30** minutes respectively. If they ring at 8:00am, when will they ring together again? *(4mks)*

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

2x2x2x3x5

120 minutes

60mins = 1 hour

120mins = $\frac{\cancel{120}^{2}}{\cancel{60}_{1}}$

2 hours

Hours	Mins
8	0 0
+ 2	0 0
10	0 0

They will ring together again at 10:00a.m

29. a) Calculate the simple interest on **Sh, 8000** for **2** years at 10% per annum. *(4mks)*

Interest = P x R x T

Sh. 8000 x 10 x 2
100

= Sh. 1600

b) Calculate the amount obtained thereafter. *(1mk)*

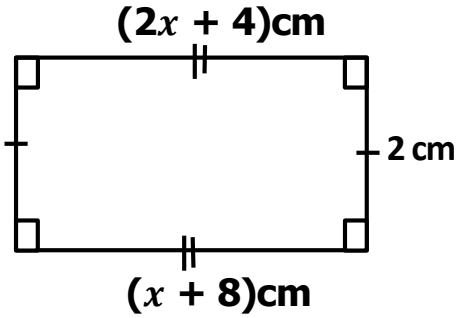
Amount = principal + interest

Sh. 8, 000

Sh. 1, 600

Sh. 9, 600

30. Study the figure below and answer the questions that follow.



a. Find the;

i. the value of x

$$\frac{(2x+4)\text{cm}}{\text{cm}} = \frac{(x+8)\text{cm}}{\text{cm}} \quad \Rightarrow \quad 2x+4 = x+8$$

$$2x - x = 8-4$$

$$x = 4$$

(2 marks)

ii. The perimeter of the figure. *(2mks)*

Length = $(x+8)$cm
= 4+8
= 12cm

perimeter = 2(L+W)
= 2(12cm+2cm)
= 2x14 cm
= 28 cm

iii. The area of the figure. *(2mks)*

Area = LxW
=12cm x 2cm
= 28 cm^2

31. A mother is **3** times as older as her daughter. Their total age is **48** years. How old is each of them? *(4mks)*

let the daughters age be d

mother	daughter	Total age
3d	d	48 years

3d + d = 48

4d = 48

$\frac{{}^{1}4d}{4_1} = \frac{48^{12}}{4_1}$

d =12

The daughter is 12 years old

Mother's age = (3xd) years

= 3x12

= 36 years

32. The table below shows results of English Premier League football matches played by;
i) Man Utd ii) Arsenal iii) Chelsea The points for Matches won = **3,**
The points for matches draw = **1,**
Zero is awarded for any matches lost.

	Number of matches		
Club	**Won**	**Drawn**	**Lost**
Man Utd	3	0	2
Arsenal	3	1	1
Chelsea	2	2	1

a. How many matches did Chelsea win? *(1mk)*

2 matches

Turn Over

b. How many points did each team get? *(2mks)*

Man united

3 X 3 points

= 9 points

chelsea

(2 X 3) + 2 points

6+2 points

8 points

Arsenal

(3 X 3)+1

(9 + 1) points

10 points

c. Which team emerged the overall winners? *(2mks)*

Arsenal

END

E-LEARN EXAMINATIONS BOARD 2024

	ACTIVITY	CLASS	READY BY	ORDERS CLOSED	DELIVERY	COST PER PUPIL
	TERM ONE EXAMS					
1	B.O.T Welcome to P.7	P.7	15th January	31st January	2nd-11th February	3,000/= Hard cpy 20,000/= Soft cpy
2	Mid-term quality check	P.7, P.6	10th march	29th March	30th -31st March	3,000/= Hard cpy 20,000/= Soft cpy
3	End of term One	P.4 – P.7	15th April	19th April	20th-21st April	3,000/= Hard cpy 20,000/= Soft cpy
	OTHER SERVICES OFFERED					
4	Schemes of work and lesson Notes(customized)	20,000/= per class P1 to P7				
5	Printing services	50/= Per Page				
6	Graphics /designing	From 10,000/=				
7	Websites	From 500,000/=				
	MUSIC DANCE AND DRAMA					
8	School Anthems	A written anthem costs 200,000/= a recorded anthem and track is for 400,000/=				
9	School songs	It costs 500,000/= to compose and record a school song(negotiable)				
10	Drama training	We train music and drama at schools. Price in negotiable				
11	Dance	We train modern and traditional/cultural dance				
12	Video shooting	Video shooting costs start from 500,000/=				
14	Video and audio adverts	We create video adverts to run on TV and Audio for radios and personal use.