THE E-LEARN EXAMINATIONS BOARD

P.6 BEGINNING OF TERM TWO

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

Question

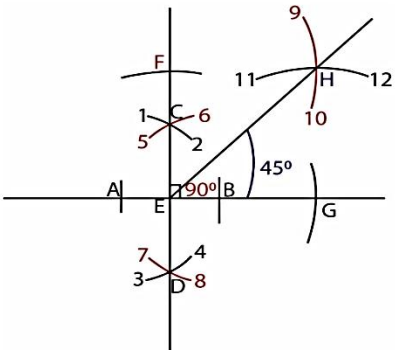
1. Work out:
$$\begin{array}{r} 4\ 1 \\ +1\ 4 \\ \hline \mathbf{5\ 5} \end{array}$$

1 + 4 = 5
4 + 1 = 5

2. Solve : 4 + y = 19
4 – 4 + y = 19 – 4
Y = 15

3. Given that H = {1, 6, 10, 15, 21} and G = {3, 6, 15, 19} Find $\cap\,(H \cap G)$
$(\mathbf{H \cap G}) = \{6, 15\}$
$\cap\,(\mathbf{H \cap G}) = 2$

4. With the help of a pencil, ruler and a pair of compasses. Construct an angle 45^0.



5. Joanita read 30 story books last term and has 16 read story books this term so far. Express the total number of books in Roman Numerals.

$$\begin{array}{r} \mathbf{3\ 0} \\ \mathbf{+\ 1\ 6} \\ \hline \mathbf{4\ 6} \end{array}$$

46 – (40 + 6)
46 – (XL VI)
46 – XLVI

6. Write the morning time shown on the clock face below

10: 35am

7. How many 500 shilling coins can you get from a ten thousand shilling note?

$$\frac{sh\ \cancel{10}^{2}000}{sh\ \cancel{500}}$$

20 five hundred shilling coins

8. Mukooli bought 400gm of sugar that costs shs 4,000 per kilo. How much did he pay the shopkeeper?

1000gm = 1 kg

400gm = $\left(\frac{\cancel{400}}{\cancel{1000}}\right) kg$

= $\left(\frac{4}{10}\right) kg$

= 0.4kg

1 kg – shs 4000

0.4kg - $\left(\frac{4}{\cancel{10}} \times shs\ 400\cancel{0}\right)$

0.4kg – (4 × Shs.400)

0.4kg – Shs 1600

He paid Shs 1600 to the shop keeper

9. Work out: $4 - \frac{2}{3}$

$$\frac{(4 \times 12) - \left(\frac{2}{\cancel{3}} \times \cancel{12}^{4}\right)}{12}$$

$$\frac{48 - 8}{12}$$

$$\frac{\cancel{40}^{\cancel{20}^{10}}}{\cancel{12}_{\cancel{6}_{3}}}$$

$$\frac{\cancel{10}^{3r1}}{\cancel{3}}$$

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

10. The average weight of 6 girls is 19kg. Find their total weight.

19kg × 6 girls

114 kg

11. Mary thinks of a number, multiplies it by 3 and adds 6 to it, the result is 24. What is the number?

Let the number be m

m×3+6 = 24

3m + 6 = 24

3m + 6 – 6 = 24 – 6

$\frac{3m}{3} = \frac{18}{3}$

m = 6

12. Find the product of the missing numbers in the sequence.

1, 4, 7, 10, **13**, **16**

+3 +3 +3 +3 +3

Product

16 × 13 = 208

13. Given that set P has 16 subsets. How many elements has P?

2	16
2	8
2	4
2	2
	1

2^n = number of elements

2^n= 16 elements

$2^n = 2^4$

n = 4 elements

set P = 4 elements

14. Simplify : (-4) – (- 12)

-4 + 12

+ve + + + + + + + + + + + +

-ve - - - -

(-4) – (-12) = + 8

15. Sanyu covers $\frac{1}{3}$ of her journey on foot, ¼ riding a bicycle and the rest in a car. What fraction of the journey does she cover using the car?

$\frac{1}{4}+\frac{1}{3}$

$\left(\frac{1}{4}\times \cancel{12}^{3}\right)+\left(\frac{1}{\cancel{3}}\times \cancel{12}^{4}\right)$

$\frac{3+4}{12}$

$\frac{7}{12}$

$1-\frac{7}{12}$

$\frac{12}{12}-\frac{7}{12}$

$\frac{12-7}{12}$

$\frac{5}{12}$

16. How many lines of symmetry has that letter?

M

One line of symmetry

17. Express 0.4m in km

1000m = 1km

0.4m = $\left(\frac{4}{10\cancel{0}}\times 10\cancel{0}\right) km$

= 400km

18. A bus moved from town A to town B at a speed of 125km/hr for 3 ½ hours. Calculate the distance between the two towns.

D = S×T

$= \frac{125km}{hr}\times 3\frac{1}{2}hrs$

$= 125km\times\frac{7}{2}$

$=\frac{\cancel{875}^{437\ r\ 1}km}{\cancel{2}}$

= 437 ½ km

19. The area of the rectangular region below is 60m^2. If the length is 12m, find the perimeter of the rectangular region.

L×W = A

12m × W = 60m²

$\frac{\cancel{12}m}{\cancel{12}m} \times \frac{\cancel{60}^{5}m}{\cancel{12}m}$

W = 5m

P=L+W+L+W

P=(12m + 5m) + (12m + 5m)

P = (17m + 17m)

P = 34m

20. Find the sum of the place value of 4 in 3468 and the value of 9 in 32907

Th	H	T	O
3	4	6	8

Hundreds(100)

T Th	Th	H	T	O
3	2	9	0	7

9×100 = 900

Sum

1 0 0
+ 9 0 0
1 0 0 0

SECTION B (12 QUESTIONS – 60 MARKS)

21. Given the number 576

a) Write the number in word (1 mark)

Units
576

Five hundred seventy six

b) Expand the number using powers of 10 (2 marks)

10^2	10^1	10^0
5	7	6

$(5 \times 10^2) + (7 \times 10^1) + (6 \times 10^0)$

c) Round off the number to the nearest hundreds (1 mark)

H T O
5 7 6
+ 1 0 0
6 0 0

576 ≈ 600

22. A poultry farm produces 2,200 eggs in a week. The eggs are then packed in trays which carry 30 eggs each.

a) How many trays are collected every week?

30 eggs = 1 tray

2,200 eggs = $\left(\frac{\overset{73\ r\ 1}{\cancel{2200}}}{\cancel{30}}\right)$ trays

= 73 $\frac{1}{3}$ trays

b) If each tray is sold at shs. 9000. How much money is collected weekly?

1 tray = shs 9000

73 $\frac{1}{3}$ trays = $\left(\frac{220}{\cancel{3}} \times shs\ \overset{3000}{\cancel{9000}}\right)$

73 $\frac{1}{3}$ trays = (220 × shs 3000)

73 $\frac{1}{3}$ trays = shs 660,000

23. At a birthday party, some pupils took Fanta (f), Mirinda (M) or both and 5 took other types of drinks as shown in the venn diagram below.

a) How many pupils took

i) Fanta

(18 + 12) pupils

= 30 pupils

ii) Mirinda

(10 + 12) pupils
= 22 pupils

b) How many pupils attended the party?
(18 + 12) + (10 + 5) pupils
30 + 15
= 45 pupils

c) What is the probability of selecting a pupil who did not take Mirinda?
Probability = $\frac{DC}{SS}$
= $\frac{18+5}{45}$
= $\frac{23}{45}$

24. Use the venn diagram below to answer questions that follow.
a) Find the value of
i) m
$m = (3_1 \times 2_1 \times 5_1)$
$m = (3 \times 2 \times 5)$
m = 30
ii) n
$n \times 2_1 \times 5_1 = 20$
$n \times 2 \times 5 = 20$
$\frac{10n}{10} = \frac{20}{10}$
n = 22

b) Calculate the greatest common factor of F_m and F_{20}
GCF = (F_m n F_{20})
(F_m n F_{20}) = ($2_1 \times 5_1$)
= (2 × 5)
GCF = 10

25. In a school of 240 pupils, $\frac{1}{3}$ of them are boys and the rest are girls

a) Find the fraction of girls

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

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

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

$\frac{2}{3}$

b) How many more girls than boys are there?

$^{2}/_{3} \times 240$ **pupils** || **2 4 0 pupils** || **1 6 0 girls**

$2 \times 80\ pupils$ || **- 1 6 0 pupils** || **- 8 0 boys**

160 girls || **8 0 boys** || **8 0 more girls**

c) If $\frac{1}{2}$ of the boys and $\frac{1}{10}$ of the girls are in upper school, how many pupils are in the lower school?

$\frac{1}{2} \times \cancel{80}^{40}\ boys\ \frac{1}{10} \times 160 girls$ **4 0** **2 4 0**

= 40 boys **= 16 girls** **+1 6** **- 5 6**

5 6 pupils **1 8 4 pupils**

26. (a) Using a ruler and a pair of compasses only, construct a rectangle ABCD such that AB = 8cm and BC = 6cm respectively

(b) Find the distance around the rectangle above

D = L + W + L + W

D = 8cm + 6cm + 8 cm = 6cm

D = 28cm

27. The figure below shows a solid block.

a) How many vertices does figure have?

8 vertices

b) Calculate the volume of the figure.

$V = L \times W \times H$

$V = 11dm \times 6\ dm \times 8\ dm$

$V = 11dm \times 48dm$

$\underline{V = 528dm^3}$

c) Calculate the total area of all the shaded faces

$T.A = (Area\ A) + (Area\ B)$

$T.A = (L \times W) + (L \times W)$

$T.A = (11dm \times 6dm) + (8dm \times 6dm)$

$T.A = (66dm^2 + 48dm^2)5$

$\underline{T.A = 144dm^2}$

$66\ dm^2$

$+\ 48\ dm^2$

$\underline{114\ dm^2}$

28. (a) Work out: 104_{five}

$+\ 41_{five}$

$\underline{200_{five}}$

$4 + 1 = 5\text{-}5$

$1r\ 0$

$1 + 0 + 4 = 5 \div = 1$

$1r\ 0$

$1 + 1 = 2$

(b) Convert 202_{five} to base ten

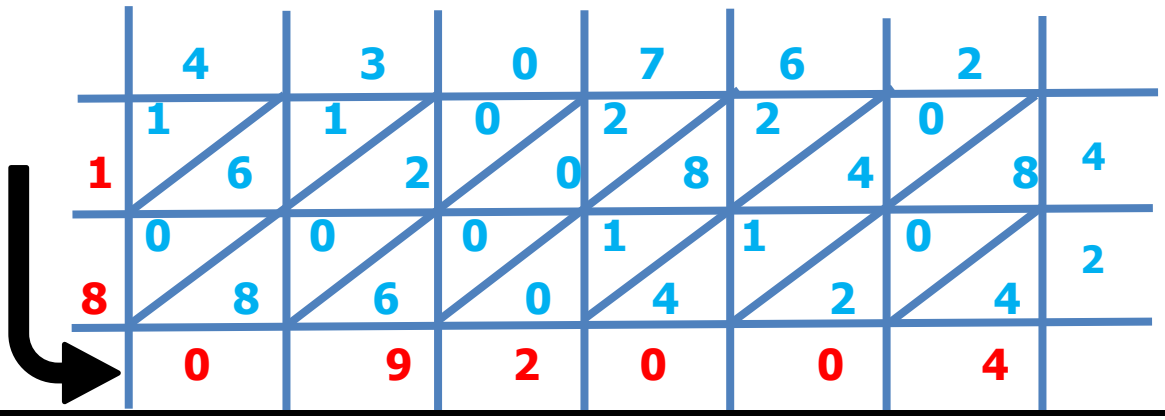
ff	f	o
2	0	2

$(2 \times 5 \times 5) + (0 \times 5) + (2 \times 1)$

$50 + 0 + 2$

52_{ten}

(c) Multiply $430762 \times 42 =$ **18092004**



29. Study the number line below carefully

i) Write the integers represented by arrow

(a) q $^{+}$8 (b) y = -12 (c) r = -4

ii) Write the mathematical additions statement for the numberline

q + y = r

+8 + -12 = -4

30. (a) simplify : 8p + 6m – p – m

8p – p + 6m – m

7p + 5m

(b) If a = 4, b = 6 and c = 3. Find the value of

i) (2a + 2b) – c

(2 × 4 + 2 × 6) – 3

(8 + 12) – 3

20 – 3

17

ii) $(a^2 + b^2) – (c^2)$

(a × a + b × b) – (c × c)

(4 × 4 + 6 × 6) – (3 × 3)

(16 + 36) – 9

52 – 9

43

31. Paul bought the following items from Namugongo supermarket.

2 packets of kakira sugar at shs 4000 each

8 apples at shs 2000 for 2 apples

2 ½ kg packets of rice at shs 32000

a) How much did paul spend altogether?

Sugar	Apples	Rice
1 packet = sh 4000 2 packets = (2 × 4000) = shs 8000	2 apples = shs 2000 1 apple = $\frac{\cancel{2000}^{1000}}{\cancel{2}}$ = shs 1 000 8 apples = (8×shs 1000) =shs 8000	= shs 3,200

Total

Shs 8000

Shs 8000

+Shs 3200

Shs 19200

b) If he had shs 50,000 before the purchase of the items, how much change did he receive?

Shs 50000

- shs 19200

Shs 30800

32. The bar graph below shows the number of pupils who were absent in a class of 50 pupils in 5 days. Study it and answer the questions that follow.

a) On which day did all the children attend school?

Thursday

b) How many pupils were absent on Monday?

10 pupils

c) How many more pupils attended school on Friday than Wednesday?

50 pupils **50** **45**

- 5 pupils **-10** **-40**

45 pupils **40 pupils** **05 more pupils**

END