HILLSIDE PRIMARY SCHOOL-NAALYA

PRE-REGISTRATION EXAMINATIONS

2023

MATHEMATICS (Set Two)

Time Allowed: 2 Hours 30 Minutes

Name: .... Stream: ....

Read the following instructions carefully

1. The paper has **two** sections: **A** and **B**.

2. **All** the working for both sections **A** and **B** must be shown in the spaces provided.

3. **All** the working must be done using a blue or black ball-point pen or fountain pen. Diagrams must be drawn in pencil.

4. **Calculators** are not allowed in the examination room.

5. Unnecessary changes of work may lead to **loss** of marks.

6. Any handwriting that cannot easily be read may lead to loss of marks.

7. **Do not** fill anything in boxes indicated: **"For Examiners' Use Only"** and those inside the question paper.

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SECTION A: (40 marks)

1. Work out: 300 - 24

2. Write **Eighty thousand fifteen** in figures.

3. Write 197 in Roman numerals.

4. Given that set P has 31proper subsets. How many elements are in set P?

5. The area of a trapezium is $35m^2$. If its height is 6m and the shorter parallel side is 5m, find the length of the longer parallel side.

6. The supplement of $3r - 10^0$ is 40^0. Find the value of **r**.

7. 5 pencils cost sh.1,500. How many pencils can one buy with sh.2400?

8. Simplify: $2t - 8k - 7t + 5k$

9. Without dividing, show that 392425 is exactly divisible by 11

10. Change $\frac{1}{4}$ to a decimal

11. A lesson that ended at 4:10pm lasted 50minutes. At what time did it start?

12. Simplify: ⁻4 + ⁻6

13. Increase 600kg by $22\frac{1}{2}\%$

14. Using a ruler, a pencil and a pair of compasses only, construct an angle of 135^0 in the space below.

15. Solve: k - 5= 1 (finite 7)

· 16. Given that $a = \frac{1}{4}$ and $b = \frac{1}{12}$. Find the value of $\frac{a}{b}$

17. What is the smallest number that can be divisible by either 6 or 8 and leaves 3 as the remainder?

18. Draw a Venn diagram to show that all hens(H) are birds(B).

19. Solve: $5 - 2y = 13$.

20. Find the square of the next number in the sequence:
   5, 8, 12, 17, 23, _____

SECTION B (60 marks)

21. Molly bought the items in the table below from a shop.
    a) Complete the table below.   (**04 marks**)

Items	Unit cost	Amount
............bars of soap	Sh. 3,000per bar	Sh. 6000
3 loaves of bread	Sh. ....per loaf	Sh. 9600
$2\frac{1}{2}$ kg of salt	Sh. 800 per kg	Sh. ....
TOTAL EXPENDITURE		Sh. ....

b) If he was given a discount of 10%, how much money did he pay?
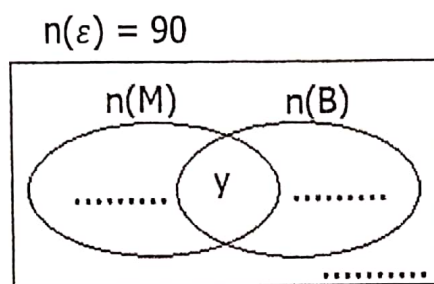   (**01 mark**)

22. a) Express 0.00597 in scientific notation.   (**02 marks**)

b) Find the sum of the value of 4 and the value of 8 in the number 24689 (*03 marks*)

23. In the village of 90 farmers, 40 grow matooke (M), 52 grow beans (B) and y grow both matooke and beans while 6 farmers grow neither of the two food crops

a) Complete the Venn diagram below. (*03 marks*)

$n(\varepsilon) = 90$

n(M)   n(B)

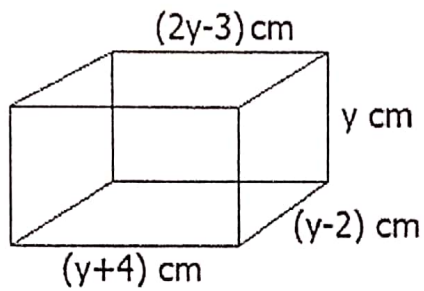......... (y) ....

....

b) Find the value of y. (*02 marks*)

24. a) Solve and find the solution set for m:

$3(m- 1) \le 9$ (*03 marks*)

b) Kato is two thirds as old as Tom. Find their total age. (*02 marks*)

25. The figure below is a cuboid. Study it and answer the questions that follow

(2y-3) cm

y cm

(y-2) cm

(y+4) cm

a) Find the value of y   (*02marks*)

b) Calculate its volume.   (*03marks*)

26. The sum of three consecutive counting numbers is 72.
    a) If the first number is p, find value of p.   (**03 marks**)

    b) Write the second number in words.   (**02 marks**)

27. Three brothers; Alex, Ben and Chris shared 360 apples in the ratio of
    3:4:5 respectively.
    a) How many apples did each get?   (**03 marks**)

    b) Express Alex's share as a percentage of the total share. (**01 mark**)

28. a) In a class of 600 pupils, $\frac{1}{3}$ of the pupils like Meat, 60% of the remainder like chicken. The rest of the pupils like Fish
    a) How many pupils like chicken? **(03 marks)**
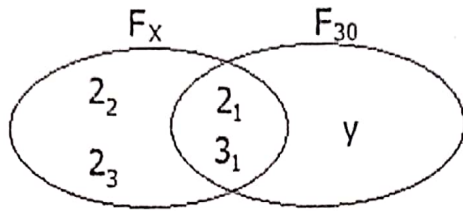
    b) How many pupils like fish? **(02marks)**

29. The table below shows the scores of a group of pupils in a class.

Marks	80	k	90	70
No. of pupils	2	3	1	4

    a) How many pupils did the test? **(02 marks)**

    b) If the mean mark was 71, find the value of k. **(03 marks)**

30. The Venn diagram below represents the prime factors of two numbers. Use it to answer the questions that follow.

F_X F_{30}

2_2 2_1
        3_1 y
2_3

a) Find the value of **x**.   *(02 marks)*

b) Calculate the value of y.   *(02 marks)*

c) Work out the LCM of X and 30.   *(02 marks)*

31. a) Work out: $\dfrac{1.8 \times 0.15}{0.6 \times 0.3}$ *(03 marks)*

b) Express 0.3636 - - - as a fraction in its simplest form.   (*02 marks*)

32. a) Using a pair of compasses, ruler and pencil only, construct a rectangle
    ABCD where line BC=9cm and line BA=5cm.   (*04marks*)

b)   Measure diagonal BD.   (*01 mark*)

END