

# GREENHILL ACADEMY SCHOOLS

## PRE-PLE JOINT SET TWELVE 2023

### MATHEMATICS

*Time Allowed: 2 Hours 30 Minutes*

**INDEX NO:**

Random No.						Personal No.		

**Candidates' Name:** .....

**Candidate's Signature:** .....

**Campus:** .....**Stream:** .....

**District Name:** .....

**Do not open this booklet until you are told to do so.**

**Read the following instructions carefully**

1. This paper consists of two sections: A and B.
2. Section A has 20 questions (40 marks).
3. Section B has 12 questions (60 marks)
4. Attempt all questions. Answers to both sections must be written in spaces provided.
5. All answers must be written in blue or black ballpoint pen or ink but not in pencil. Diagrams should be drawn in pencil.
6. Crossing out of answers will 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 box indicated for examiner's use only.

FOR EXAMINERS USE ONLY		
Qn. No	MARKS	EXR'S NO.

1. Work out: 1 2 5

$$\begin{array}{r} - \quad 2 \quad 5 \\ \hline \end{array}$$

2. Write **XLIX** in Hindu Arabic numerals.



3. Express **48050** in standard form.

4. Given that **A** = {1, 2, 4, 8}. Find the number of proper subsets that can be formed from set **A**.

5. Evaluate:  $^{-}5 - ^{-}8$

6. Express  $\frac{4}{5}$  as a percentage.

7. Find the complement of  $54^\circ$ .
8. A dice is tossed once. What is the probability that a number less than 5 is shown on top at random?
9. Given that  $r = \frac{1}{3}$  and  $p = \frac{1}{15}$ . Find the value of  $\frac{r}{p}$ .
10. Express 72km/hr as metres per second.
11. Work out the circumference of the circle whose diameter is 14cm. (Take  $\pi = \frac{22}{7}$ )

12. Today is Tuesday. What day of the week will it be after 43 days?
13. With the help of a ruler, a pencil and a pair of compasses only, construct an angle of  $135^\circ$  in the space provided below.
14. The **LCM** of **m** and **n** is **120** and their **GCD** is **10**. If **m = 40**, find the value of **n**.
15. Five girls can take 12 days to do a piece of work. How long will 3 girls take to do the same piece of work?
16. If  represents 12 apples, how many apples can be represented by  
 ?

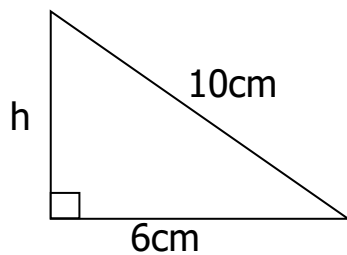
17. Find number that has been expanded to give;

$$(5 \times 10^3) + (3 \times 10^1) + (6 \times 10^0)?$$

18. Increase sh.14,400 by 25%.

19. Solve:  $2^{(3h-1)} = 32$ .

20. Find the area of the figure below.



**SECTION B:**

**(Answer all answers in this section).**

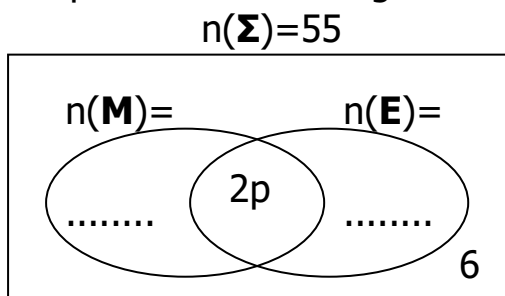
**Marks for each question are indicated in the brackets**

21. The sum of four consecutive even numbers is 68. If the largest even number is  $w$ , find the product of the largest and the smallest numbers. **(05 marks)**

22. In a class of 55 pupils, 21 like Mathematics (M) only, 18 like English (E) only,  $2p$  like both subjects while 6 pupils do not like any of the two subjects.

a) Complete the Venn diagram.

**(02 marks)**



b) Find the number of pupils who like Mathematics.

**(03 marks)**

23. In a school library,  $\frac{1}{4}$  of the books are books for English,  $\frac{2}{5}$  of the remainder are books for Mathematics and the rest are other subjects. If there are 180 other subjects, find the total number of books in the library. **(04 marks)**

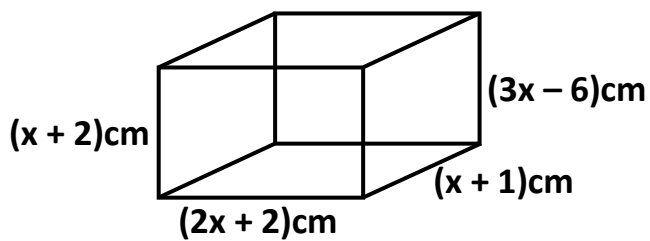
24. At Trinyi Primary School, two bells for lower and upper primary ring at the intervals of 30 minutes and 40 minutes respectively.
- a) After how long will the two bells take to ring together again? **(03 marks)**
- b) If they start to ring at 11:30a.m, at what time will they ring together again? **(02 marks)**
25. a) Using a ruler, a pencil and a pair of compasses only, construct a quadrilateral **LOPE** where line **LO** = 6.5cm, angle **LOP** =  $120^\circ$  and line **LE** = 4.5cm. **(04 marks)**
- b) Measure the longest diagonal ..... **(01 mark)**

26. Given that  $y = 3x - 5$ , complete the table below.

**(05 marks)**

<b>x</b>	4	_____	$\frac{1}{3}$	_____	3
<b>y</b>	_____	-2	_____	-8	4

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



a) Find the value of **x**.

**(02 marks)**

b) Calculate the volume of the figure above.

**(03 marks)**



28. The table below shows the number of notes withdrawn from the bank in different denominations. Complete the table. **(05 marks)**

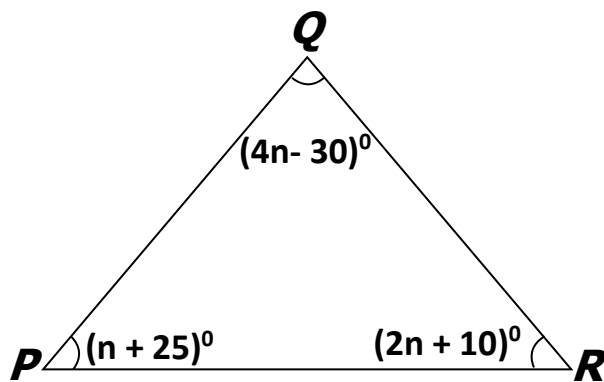
Denomination	Number of notes	Amount
Sh.1,000	25	Sh.25,000
Sh. 5,000	12	Sh. _____
Sh. _____	30	Sh. 300,000
Sh. 20,000	_____	Sh. _____
Sh. 50,000	8	Sh. 400,000
<b>Total amount</b>		Sh. _____

29. a) Solve:  $\frac{(2x - 1)}{3} = \frac{(x + 2)}{4}$  **(02 marks)**

- b) Solve for k:  $7k - 3(k - 2) = 18$  **(03 marks)**

30. Lubanga drove at 70km/h for 2 hours from town **A** to town **B**. He then continued to town **C** at a speed of 80km/h for 3 hours. Calculate his average speed for the whole journey. **(05 marks)**

31. The figure below is a triangle PQR. Use it to answer the questions that follow.



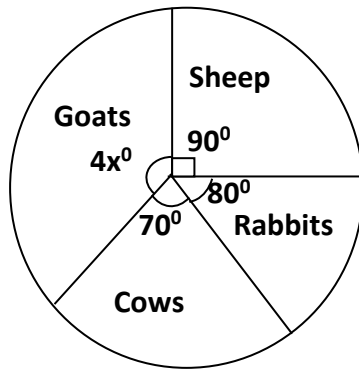
- a) Find the value of ***n***.

**(03 marks)**

- b) Calculate the size of angle **PQR**.

**(02 marks)**

32. The pie- chart below represents the number of animals in Mr. Opio's farm. Use it to answer the questions that follow.



- a) Calculate the value of  $x$ . **(02 marks)**
- b) If there are 28 cows, how many animals are there in the farm? **(03 marks)**

\*\*\*\*\***END**\*\*\*\*\*

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