

Date: 2082/03/22

Symbol No.: -.....

NEW MILLENNIUM ACADEMY

First Terminal Exam - 2082

Subject: **MATHS**

Class: 8 (EIGHT)

Time : 2 hours

F.M: 50

Attempt all questions:

AREA: SETS AND STATISTICS

1. If $U = \{1, 2, 3, 4, 5, 6\}$, $A = \{2, 4, 6\}$, $B = \{1, 2, 3, 4\}$, $C = \{4, 6, 2\}$ then answer the following questions:

(a) Write whether sets A and B are overlapping or disjoint sets? [1K]

(b) Show sets U, A and B in Venn - diagram. [1U]

(c) Explain, why set A is an improper subsets of set C? [1HA]

2. The given data shows the monthly expenditure (Rs.) of a family in different titles:

Titles:	Food	Education	Rent	Utility	Others
Expenditure:	15,000	7,000	8,000	4,000	2,000

(a) Show the above information in PIE - CHART. [2A]

(b) If the family saves Rs. 15,000 per month, then calculate the yearly income of the family. [1A]

AREA: ARITHMETIC

3. (a) Write the base of the binary number system. [1K]

(b) If \blacksquare and \square denotes 1 and 0 respectively, which of the give boxes will have to be shaded to denote 20 in the binary number system? [2A]



(c) The scoreboard of a competition is given below:

TEAMS:	RED	BLUE	GREEN
SCORES:	432_5	1110011_2	116

Who won the competition? [2HA]

4. In a community there are 30 houses. Each house uses 5000 liters of water every week.

(a) Define SCIENTIFIC NOTATION. [1K]

(b) Find total liters of water used by 30 houses in a week, write it in scientific notation. [1U]

(c) Find the total amount paid by a house in a month at the rate of 4 paisa per liter. [1A]

(d) Simplify: $2.34 \times 10^3 + 26.6 \times 10^2$ [1U]

5. (a) Convert $1.2\overline{34}$ into fraction. [2U]

(b) Show $\sqrt{3}$ in a graph. [2A]

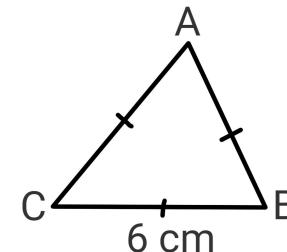
(c) Explain, why $\sqrt{3}$ is an irrational number? [1HA]

AREA: MENSURATION

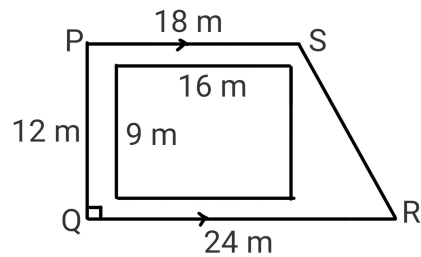
6. Answer the following questions:

(a) Write the formula to calculate the area of rhombus. [1K]

(b) Find the area of figure along side. [1U]



- (c) From the given figure, PQRS is a land and ABCD is an area used for the construction of a building. Calculate the area left after construction of building.



[2A]

- (d) Will Rs. 9000 be enough to plant grasses on remaining part of land at Rs. 83 per m^2 ? Justify.

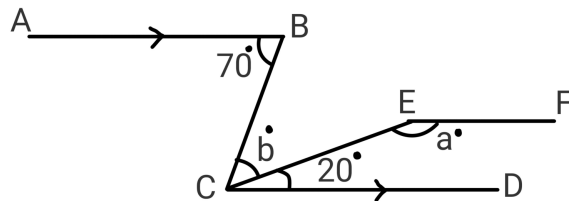
[1HA]

AREA: ALGEBRA

7. (a) If $4x \square = 4$, what must be the value in the box? [1K]
 (b) Prove that: $\frac{4^4 \times 5^5}{25^3 \times 16^2} = \frac{1}{5}$ [2A]
8. (a) Factorize: $(a + b)^2 + 13(a + b) + 40$ [2U]
 (b) The area of a room is $9x^2 + 30xy + 25y^2 m^2$, prove that the room is a square room. [2A]
9. (a) Write the factors of $x^2 - 1$. [1K]
 (b) For what value of 'p', the value of algebraic expression $p^2 - 5p + 6$ will be zero? [2HA]

AREA: GEOMETRY

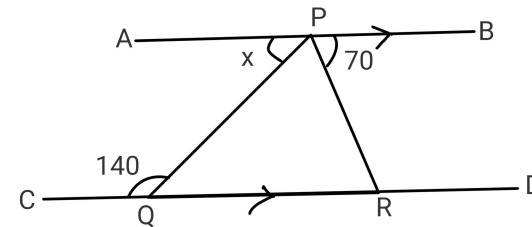
10. Study the given figure and answer the following questions:



- (a) Write a pair of alternate angle from the given figure. [1K]
 (b) Find the value of 'b' with geometric reason. [2U]

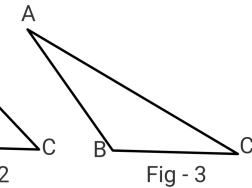
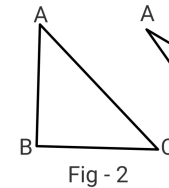
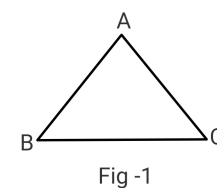
- (c) For what value of 'a', the lines CD and EF will be parallel lines? [2HA]

11. Answer the following questions based on given figure:



- (a) Find the value of 'x' with geometric reason. [2U]
 (b) Prove that: $\triangle PQR$ is an isosceles triangle. [3A]

12. Answer the following question based on given figures:



- (a) If $\triangle ABC$ is an equilateral triangle, then what is the measurement of $\angle A$? Write. [1K]
 (b) Copy and complete the given table. [3A]

Figure:	$\angle A$	$\angle B$	$\angle C$	$\angle A + \angle B + \angle C$
I				
II				
III				

- (c) What conclusion can you derive from the observation of above table? [1HA]

BEST OF LUCK

Note: You have to solve this question paper once again as vacation assignment and submit after vacation.

[1K]

[2U] Thank you!