

Date: 2082/03/20

Symbol No.:-.....

NEW MILLENNIUM ACADEMY

First Terminal Exam - 2082

Subject: **MATHS**

Class: 7 (SEVEN)

Time : 2 hours

F.M: 50

Attempt all questions:

AREA: SETS AND STATISTICS

1. If $P = \{1, 2, 3, 4\}$, $Q = \{2, 4, 6, 8\}$, $R = \{\}$, $S = \{6, 2, 4, 8\}$ then answer the following questions:

- (a) Which set is an example of **null set**? [1K]
- (b) Write two proper subsets of set **P**. [1U]
- (c) Explain, why sets **Q** and **S** are equal and equivalent sets? [1HA]

2. The data given below is the sales of mangoes in the ABC fruit shop within a week.

DAYS:	SUN	MON	TUE	WED	THU	FRI	SAT
SALES (KG):	25	35	15	20	30	10	40

- (a) Show the above information in a **LINE GRAPH**. [2A]
- (b) The mangoes were sold for Rs. 100 per kg through out the week. Find the earning of the fruit shop in a week by selling mangoes. [1A]

AREA: ARITHMETIC

- 3. (a) Select the square of **11** from the given set of numbers. [1K]
{144, 169, 121}
- (b) Find the square root of: **13,689** (by division method) [2U]

(c) A cubical water tank can hold $1728 m^3$ of water in it. Find the measurement of its sides. [2A]

- 4. (a) Write the full form of **L.C.M** [1K]
- (b) Find the L.C.M of 10 and 15 [1U]
- (c) Sunaulo Bihani aims to distribute 108 stories books, 96 poems books and 120 novels to the children of BHIMFEDI RURAL MUNICIPALITY. Find the maximum number of children to receive the books in equal numbers. [2A]
- (d) Find how many stories books, poems books and novels does each child receive? [1A]

5. (a) Simplify: $(+ 10) \div (- 5) \times (- 2)$ [1U]

(b) The rule of a quiz competition was: (+5) awarded for every right answer, (-2) for every wrong answer, (0) for no answer. [2HA]

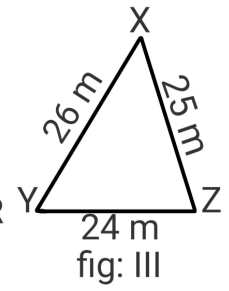
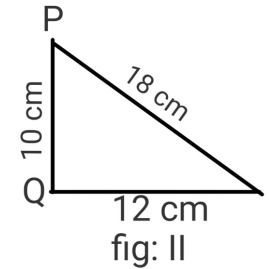
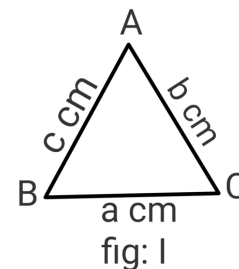
Groups	Right answers	Wrong answers	No answers
A	8	2	2
B	9	3	0
C	8	3	1

Who won the competition?

(c) $a = (- 1)$, $b = (+ 2)$ and $c = (- 3)$, is $b + ac$ greater than zero? Justify. [1HA]

AREA: MENSURATION

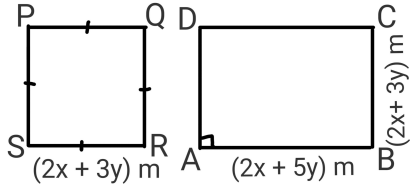
6. Answer the following questions based on given figures:



- (a) Write the perimeter of given figure (fig:I). [1K]
- (b) Find the perimeter of figure given alongside (fig: II). [1U]

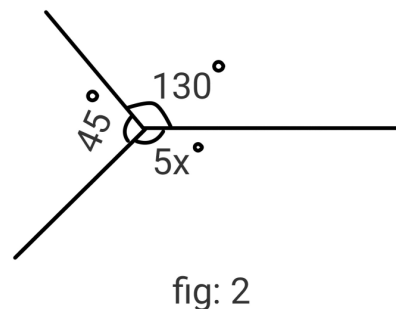
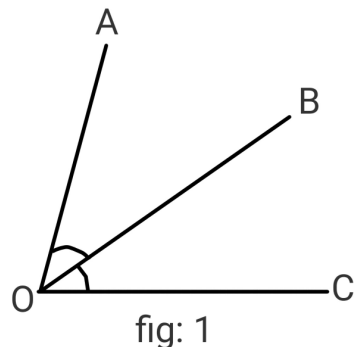
- (c) XYZ is a protected land area of a community for their religious activities. Calculate the length of wire required to fence it 3 times (fig: III). [2A]
- (d) Will Rs. 23,000 enough to fence the land 3 times at the rate of Rs. 100 per meter? Justify. [1HA]

AREA: ALGEBRA

7. (a) Write the value of $(2x - 3y)^0$. [1K]
- (b) If $a + b + c = 1$, prove that:
 $x^{a+b} \times x^{b+c} \times x^{c+a} \times x^{a-b} \times x^{b-c} \times x^{c-a} = x^2$ [2A]
8. (a) Find the square of: $(2x + 3y)$ [2U]
- (b) Compare the area of PQRS and ABCD from the figure alongside. [2HA]
- 
9. (a) Divide: x^3 by x^2 [1K]
- (b) The area of a living room is $a^2 + 7a + 12 m^2$ and its length is $(a + 4)$ m, find its breadth. [2A]

AREA: GEOMETRY

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



- (a) Write the name of adjacent angle of $\angle AOB$. [fig: 1] [1K]
- (b) Find the value of 'x' with geometric reason. [fig: 2] [2U]
- (c) If $\angle AOB = 7x$ and $\angle BOC = 11x$, for what value 'x', $\angle AOB$ and $\angle BOC$ will be adjacent supplementary angles? [2HA]

11. (a) Construct an angle of 45° and label it. [2U]
- (b) Study the given figures, copy and complete the given table. [3A]

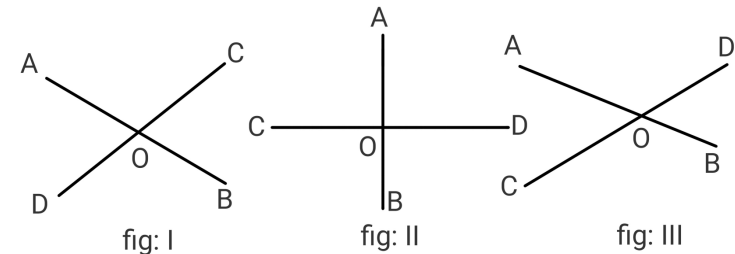


Figure:	$\angle AOC$	$\angle BOD$	Result
I			
II			
III			

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

12. A (3, 4), B (3, - 3), C (4, - 3) are the three vertices of rectangle ABCD.

- (a) In which quadrant does point B lie? [1K]
- (b) Plot the points A, B and C on a graph. Find the coordinates of remaining vertex D. Also, calculate the area of of rectangle ABCD so formed. [3A]

BEST OF LUCK