

SECTION A [30 MARKS]
ANSWER ALL QUESTIONS

Question 1

[30]

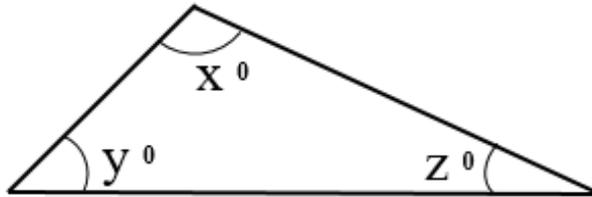
For each question, there are FOUR responses: A, B, C, and D. Choose the corresponding letter of your response and CIRCLE it neatly. NO score will be awarded if you circle more than ONE letter.

- i. The common factor of any natural number from the number cards below is



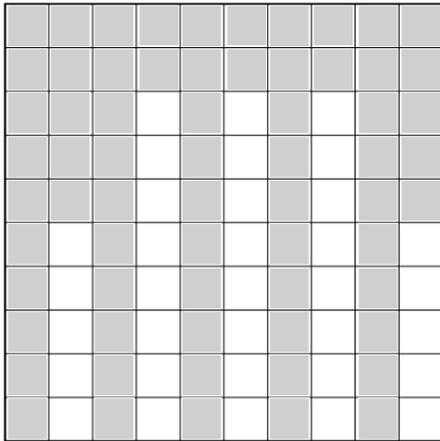
- A 0.
- B 1.
- C 2.
- D 3.

- ii. The sum of the angles in the given diagram is



- A 60° .
- B 90° .
- C 180° .
- D 360° .

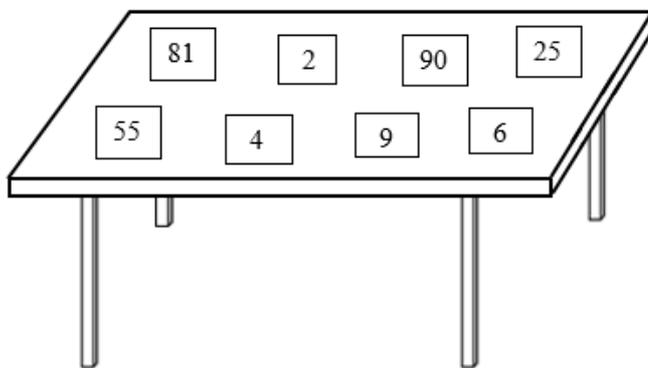
iii. A student shaded the grid as given.



Which one represents the shaded parts of the grid?

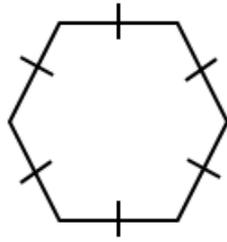
- A 0.34
- B 0.66
- C 34
- D 66

iv. Identify all the square numbers from the cards displayed on the table.



- A 2, 6, 55, 90
- B 4, 9, 25, 90
- C 4, 9, 55, 81
- D 4, 9, 25, 81

- v. The order of rotational symmetry of the given shape is



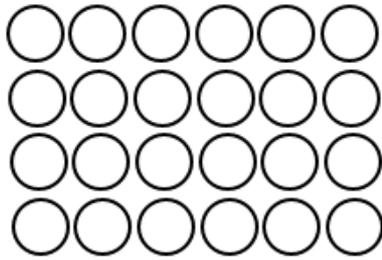
- A 1.
B 2.
C 6.
D 12.
- vi. Sangay, Manju, Dema, and Kinley calculated the mean for the data set:
4, 6, 2, 7, 3, 2

Name	Calculation
Sangay	$4 + 6 + 2 + 7 + 3 + 2 = 24$
Manju	$2, 2, \underline{3}, \underline{4}, 6, 7 = \frac{3+4}{2} = 3.5$
Dema	$\underline{2}, \underline{2}, 3, 4, 6, 7 = 2$
Karma	$2 + 2 + 3 + 4 + 6 + 7 = \frac{24}{6} = 4$

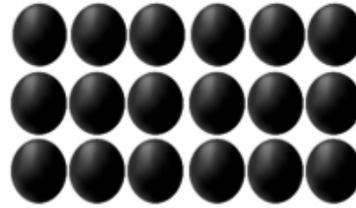
Who calculated the mean correctly?

- A Dema
B Karma
C Manju
D Sangay

vii. What is the ratio of Black Marbles to White Marbles in the simplest form?



White Marbles



Black Marbles

- A 24:18
- B 18:24
- C 4:3
- D 3:4

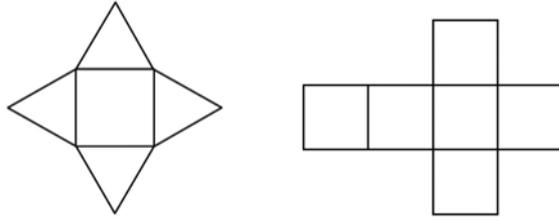
viii. Study the pattern below and answer the question.

Position	Square number	Triangular number
1 st	1	1
2 nd	4	3
3 rd	9	6
4 th	16	10
5 th
6 th

What is the sum of the 5th square number and the 6th triangular number?

- A 46
- B 40
- C 25
- D 21

ix. Identify the common properties of the given nets.



- I. Both can be folded to make 3-D shapes.
 - II. Both have polygonal bases.
 - III. Their shape and number of bases are the same.
 - IV. None of them have round sides.
- A I, II, III
 - B I, II, IV
 - C I, III, IV
 - D II, III, IV

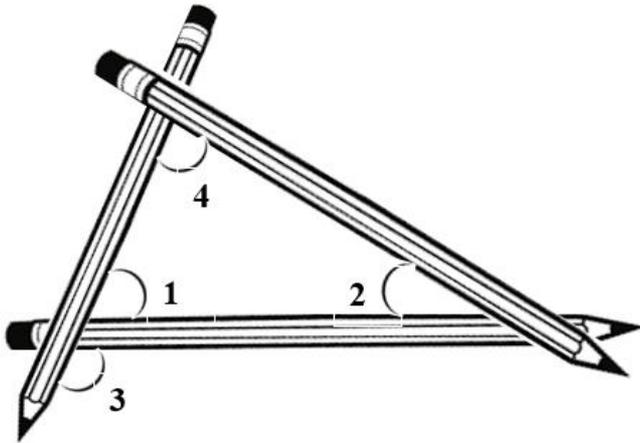
x. Following candidates contested for the local government election.

Candidate	Number of Votes Secured
1 st	Four-fifteenths of the total votes
2 nd	One-third of the total votes
3 rd	Two-fifths of the total votes

How many more votes did 3rd candidate secure than 1st candidate?

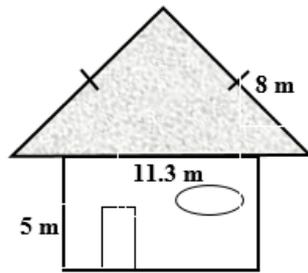
- A $\frac{10}{15}$
- B $\frac{6}{10}$
- C $\frac{2}{10}$
- D $\frac{2}{15}$

- xi. Which of these angles is closest to the size of the right angle?



- A 4
B 3
C 2
D 1
- xii. Shopkeeper A earned a profit of Nu. 2,350,000 and Shopkeeper B earned a profit of Nu. 0.235 million in a month. Which of the following justifications best describes the statement?
- A Shopkeeper A earned more profit because 2 million in Nu. 2,350,000 is greater than 0 million in Nu. 0.235 million.
B Shopkeeper B earned more profit because Nu. 0.235 million is greater than Nu. 2,350,000
C Shopkeeper B earned more profit because the ngultrum given in millions is greater.
D Shopkeepers A and B earned the equal profit.

xiii. Deepak designs a house with an isosceles right triangle and a rectangle.

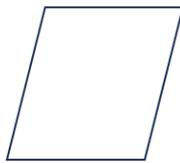


What is the area of the triangle?

- A 90.4 m^2
- B 64.0 m^2
- C 45.2 m^2
- D 32.0 m^2

xiv. Which of the following polygons has all the properties given below?

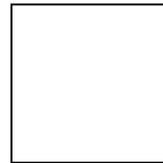
- The diagonals bisect each other.
- Both diagonals are lines of symmetry.
- It has four congruent right isosceles triangles.



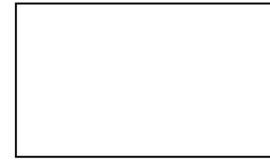
P I



P II



P III



P IV

- A P I
- B P II
- C P III
- D P IV

xv. Four teams of students are surveyed on their favourite subjects in a school.

Team I: It involved students' leaders.

Team II: It involved parents and teachers only.

Team III: It involved a maximum number of students from each class.

Team IV: It involved all the members of the school.

Which group collected the data with the most correct sample?

- A Team I
- B Team II
- C Team III
- D Team IV

SECTION B (30 MARKS)

ANSWER ALL THE QUESTIONS

Question 2

a) The number cards are drawn from a bag.

[3]

9	11	16	29
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Sort out the numbers and fill in the table.

Prime Numbers	Composite Numbers

Write one difference between the prime number and the composite number.

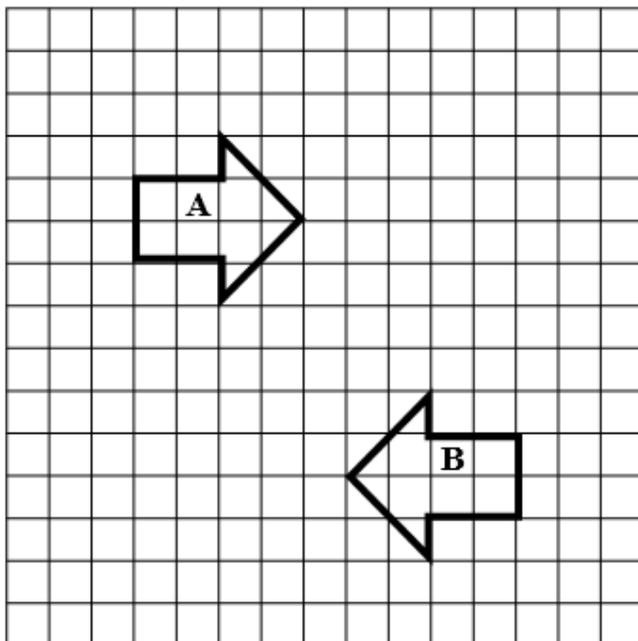
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- b) Kinley has 8 more stickers than Leela. Together they have 26 stickers. [2]
How many stickers does Leela have?

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Question 3

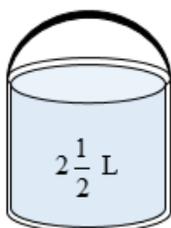
- a) A student transformed Shape A to B as shown in the diagram. [3]



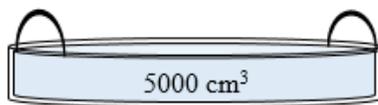
Write down the transformations used to move Shape A to Shape B.

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- b) A farmer filled the containers with milk. [2]



Container A



Container B

Which container holds more milk? Justify your answer.

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Question 4

- a) The table shows the import of goods in the year 2020. [3]

Goods	Price (Nu)
Coke	1,717,380,000
Cooking Oil	968 million
Rice	2.38 billion

Which goods was imported least in the country? Show your work.

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- b) Dorji used 6 cubes to build a staircase with three steps. He says that he needs 20 cubes to build a staircase with six steps. Do you agree with him? Justify. [2]

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Question 5

- a) A home science club in a school is knitting hats for 5 members. They want each member to get 2 red hats and 3 green hats. [3]
- i. How many hats does the club need to knit?

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- ii. If there are 20 members, how many hats do they need to knit?

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- b) During Annual School Concert, the students performed different types of dances as shown in the table. [2]

Types of dance	Number of students
Rigsar	40%
Boedra	$\frac{1}{4}$
Others	0.35

Which type of dance did most students prefer to perform? Justify.

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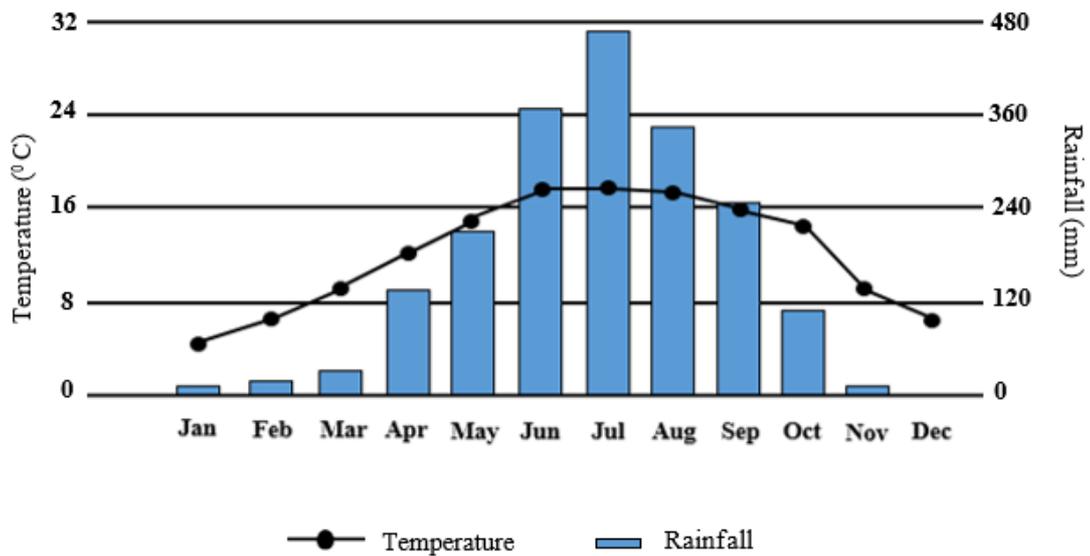
Question 6

- a) During a Tshechu, a group of players predicted events based on the probabilities given in the table. Complete the given table. [3]

Theoretical Probability	Event
$\frac{1}{6}$	
50%	
Very likely	

- b) The graph shows average monthly temperature and rainfall in Bhutan in the year 2022. [2]

Write two findings between temperature and rainfall.



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Question 7

- a) There are two rectangular gardens. The area of the Garden A is 40 m^2 and the perimeter of Garden B is 40 m. Will they have same side lengths? Explain. [3]

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b) Draw an outline of a house and calculate its area.

[2]

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Measurement Formulas and Relationship

1. Area of a rectangle = $l \times w$
2. Area of parallelogram = $b \times h$
3. Area of triangle = $(b \times h) \div 2$ **OR** $\frac{b \times h}{2}$
4. Perimeter of rectangle = $2(l + w)$ **OR** $l + w + l + w$
5. Perimeter of square = $4 \times s$ **OR** $s + s + s + s$
6. Volume of rectangular prism = $l \times b \times h$
7. Volume of cube = $s \times s \times s$
8. Theoretical probability =
$$\frac{\text{Number of favourable outcomes}}{\text{Number of possible outcomes}}$$
9. $1 \text{ cm}^3 = 1 \text{ mL} = 1 \text{ g}$
10. $1 \text{ tonne} = 1000 \text{ kg}$
11. $1 \text{ kg} = 1000 \text{ g}$

Rough Work