

**Mathematics**

**Writing Time : 2 Hours**

**Total Marks : 100**

**READ THE FOLLOWING DIRECTIONS CAREFULLY:**

1. Do **not** write for the first **fifteen minutes**. This time is to be spent reading the questions. After having read the questions you will be given **two** hours to answer all questions.
2. In this **question paper**, you will find 15 questions in Section A and 14 questions in Section B (numbered from 2 to 15). You must answer **all** the questions. Each question in Section A is worth **2 marks**.
3. All answers for Section 'A' and 'B' **must** be written in the answer sheets provided by the school.
4. Once the examination begins, you will not be allowed to ask questions, speak with others or move around.
5. If you finish before the time is over, close the Answer Booklet, and sit quietly.

***DO NOT forget to write your name, class/section and the name of your school on the answer sheet(s).***

**IF YOU HAVE ANY QUESTIONS, ASK THEM NOW**

**TURN PAGE**

**(15 Minutes is to be allowed for reading as well as for teachers on duty to explain the instructions)**

## Section A

15 QUESTIONS [30 MARKS]

**DIRECTIONS:** Section A consists of 15 Questions and each question carries 2 marks.  
Answer **ALL** the questions.

a. What is the improper fraction of  $3\frac{5}{8}$ ?

**A**  $\frac{23}{8}$

**B**  $\frac{16}{8}$

**C**  $\frac{29}{8}$

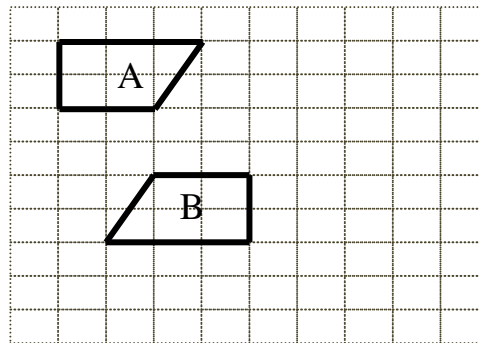
b. All the fractions are arranged from the least to greatest **EXCEPT**

**A**  $\frac{1}{5}, \frac{2}{7}, \frac{5}{6}$

**B**  $\frac{1}{7}, \frac{1}{9}, \frac{2}{5}$

**C**  $\frac{2}{7}, \frac{4}{6}, \frac{7}{8}$

c. In the diagram below which of the following combination of transformations will move shape A to shape B.

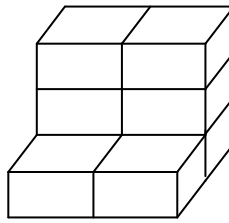


**A** Translate to the right to line up with B and reflect horizontally.

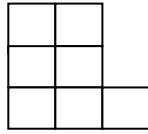
**B** Translate to the right 4 units and down 2 units, then rotate  $\frac{1}{2}$  turn around the turn centre.

**C** Translate to the right 6 units and rotate CCW turn around the turn centre.

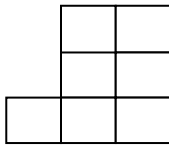
d. In the given structure the right face view is



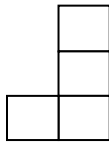
**A**



**B**



**C**



e. Which of the following has a product of about 10?

**A**  $7 \times 1.4$

**B**  $6 \times 3.45$

**C**  $9 \times 1.23$

f. Which of the expressions has necessary brackets?

**A**  $4.8 ( 2.4 \times 2 ) + ( 9.1 \div 1.3 )$

**B**  $( 4.8 - 2.4 ) \times 2 + 9.1 \div 1.3$

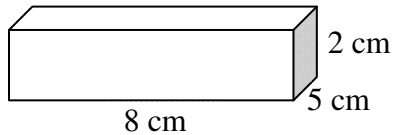
**C**  $( 4.8 - 2.4 \times 2 + 9.1 \div 1.3 )$

g. Your mathematics textbook of class VI might weigh around

**A** 12 g

**B** 2000 g

**C** 500 g



h. In the above figure, the volume of the shape is

- A  $80 \text{ cm}^3$
- B  $80 \text{ cm}^2$
- C 80 cm

i. In the table given on the right hand side, what is the ratio of roses to sunflowers?

- A 3:5
- B 5:3
- C 3:8

Name	No.
Rose	3
Sunflower	5
Total	8

j. Which of the following pairs are equivalent ratios?

- A 2 : 3 and 6 : 8
- B 5 : 8 and 7 : 10
- C 4 : 5 and 12 : 15

k. The standard form of three hundred two million sixty five thousand is

- A 302,006,500
- B 302,065,000
- C 300,265,000

l. 38.2 Mega Byte is equal to

- A 38200 MB.
- B 38200 GB.
- C 38200 KB.

m. The median and mean of 10, 14, 2, 6, 7, N is 8. What is the value of N?

- A 8
- B 9
- C 10

n. Which of the following is the farthest point from the origin?

- A -4, -6
- B -2, -1
- C 0, -3

o. What is the theoretical probability of rolling a die and getting a 2?

- A  $\frac{2}{6}$
- B  $\frac{1}{6}$
- C  $\frac{3}{6}$

### SECTION B [70 MARKS]

#### ANSWER ALL THE QUESTIONS

##### Question 2

a. Which of the following tasks took more time to complete? How do you know?

$\frac{5}{6}$  hours weeding

[2]

$\frac{4}{5}$  hours digging

b. i) How are 4.06 and 4.6 the same and different?

[2]

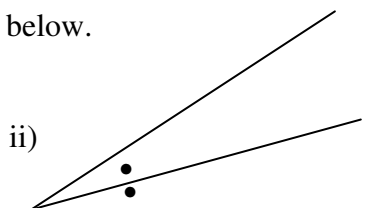
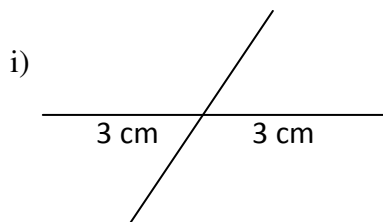
ii) Which decimal is greater 7.18 or 7.08?

[1]

---

**Question 3**

a. Name the bisectors given in the diagram below.



b. Draw the following angles using a protector. [3]

i)  $110^\circ$

ii)  $80^\circ$

iii)  $140^\circ$

**Question 4**

a. Calculate [3]

i)  $(20.5 + 3.8) - 7.8 \times 5.4 \div 9$

ii)  $14 - 3.5 \times 9.4 \div 4.7$

b. Pema divided like this

$$0.4 \overline{)3.0} \longrightarrow 4 \overline{)30}$$

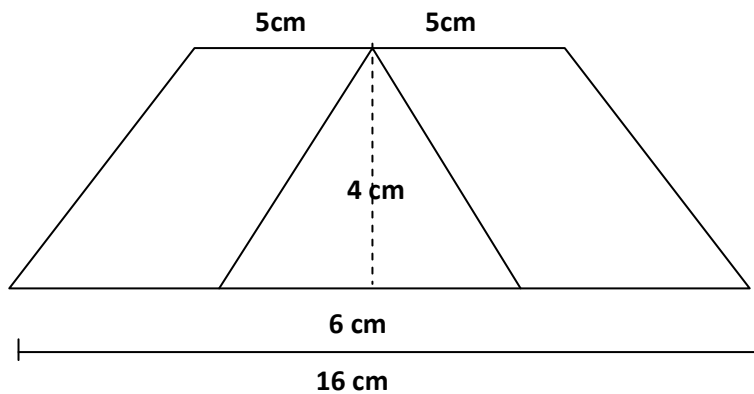
Do you agree with what he did? Explain. [2]

**Question 5**

a. i) Write 4:15 a.m in 24-hour clock time. [1]

ii) Write 21:33 in 12 -hour clock time. [1]

- b. Calculate the area of the following shape. Show your work.



### Question 6

- a. 20% of 40 students are girls. Calculate the number of boys and girls. [3]
- b. What is the best price for the buyer, 5 apples for Nu 125 **OR** 10 apples for Nu 220? Show your work. [2]
- c. i) It takes 18 kg of milk to make 1kg of butter. What is the ratio of milk to butter? [1]
- ii) Make a chart to show the amount of milk needed to make 2 kg, 3kg and 4 kg of butter. [2]

### Question 7

- a. Draw a number line and mark each integer on it. [4]
- i) - 3
- ii) +6
- iii) opposite to - 5
- iv) opposite to +2
- b. i) Why is 2 the only even prime number? [1]
- ii) Find the common factors of 40 and 100. [2]
-

**Question 8**

a. i) Create a double bar graph using the information given in the table below.

Students	Blue	Pink	Red	Other
Boys	7	1	5	4
Girls	3	8	7	4

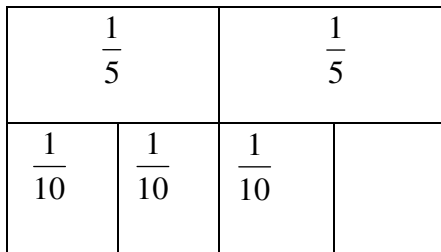
ii) Which colours are more popular with girls? [1]

b. Name the coordinates of a point that fit each description. [3]

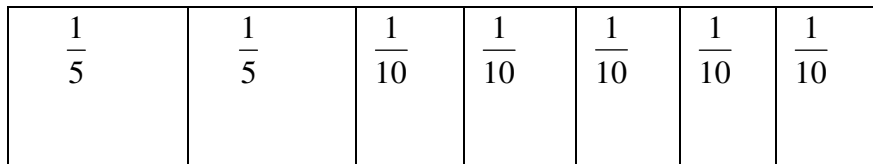
- i) In quadrant II but close (0, 0).
- ii) 3 units left and 2 units up from (- 5, - 2).
- iii) 5 units left of (- 5, - 2).

**Question 9**

a. i) What fractions are being subtracted below? Find the difference. [2]



ii) What fractions are being added in the picture given below? What is the sum? [2]



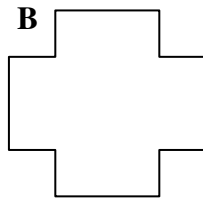
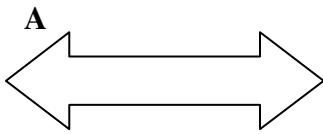
b. Write each of the following decimal as a fraction. [ 3]

- i) 2.5
- ii) 0.03
- iii) Use a hundredths grid to model and find the product of  $0.7 \times 0.3$   
(Hundredth grid is on page 11)



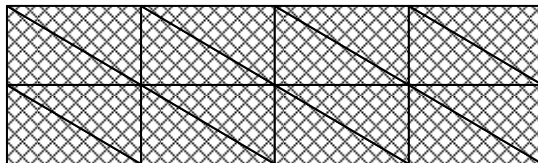
**Question 10**

a. i) Describe the turn symmetry of each shape given below.



ii) Is this a tessellation? How do you know?

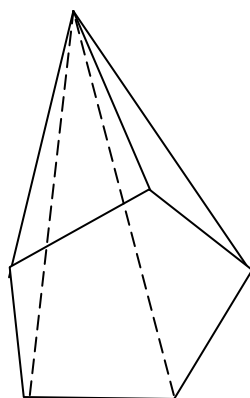
[1]



b. i) Why is it important to have more than one orthographic drawing to create a cube structure?

[1]

ii) Examine this pentagon based pyramid. The base is a regular Pentagon.



Sketch two cross sections and two planes of symmetry.

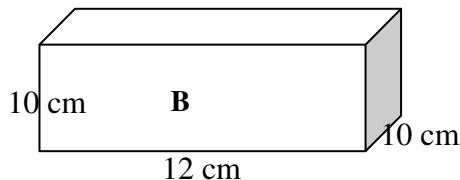
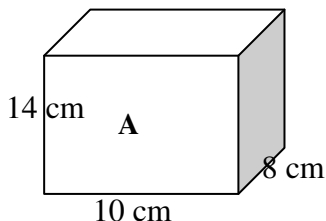
[2]

**Question 11**

- a. A park is 3.0 km by 3.6 km in area. It is divided into 4 equal sections.  
What is the area of each section?
- b. Write a word problem that could be solved by dividing a decimal by a whole number.

**Question 12**

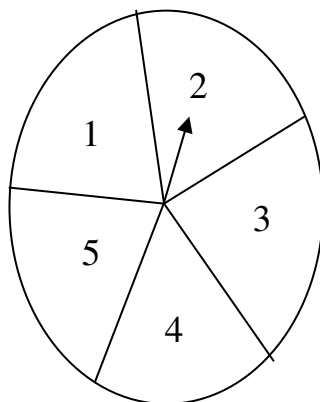
- a. Which box holds more, Box A or Box B? [3]



- b. i) How many hours are there between 13:25 and 09:15 the next day? [2]
- ii) Order the following weights from lightest to heaviest. [1]  
12 t, 60 g, 4 kg, 3 t, 600 g, 14 kg

**Question 13**

- a. What is the theoretical probability of each? [2]
- i) Tossing Tashi Tag-gye on a coin.
- ii) Spinning a number less than 4 on this spinner.



- b. The ages of group of people at a meeting are 21, 25, 36, 45, 25, 21, 56 and 25.  
Find the mode age? [1]
- c. Suppose you want to know the amount of house rent most people pay in Bhutan.  
Is it good to ask only children in Thimphu? Give **one** reason. [2]

(Tear off this grid and attach with your answer script)

Grid for question 9(b) iii)