KENDRIYA VIDYALAYA SANGATHAN

GUWAHATI REGION

RATIONALISED SYLLABUS

BOOK CUM WORKSHEET

Class : VIII

Mathematics

(Ganita Prakash ~ Part II)

As per Rationalised Syllabus for SEE 2025-26

Session : 2025-26

केन्द्रीय विद्यालय

PM SHRI

Pradhan Mantri Schools for Rising India

Message from Deputy Commissioner

It gives me immense pleasure to present the Rationalised Study Material – Book cum Worksheet for Class VIII Mathematics, prepared in accordance with the rationalised syllabus for SEE 2025–26. This material aims to ensure uniformity, academic rigor, and learner-centric pedagogy across all Kendriya Vidyalayas under Guwahati Region.

Sh. C. S. Azad
Deputy Commissioner
KVS, Guwahati Region

Message from Assistant Commissioner

The Rationalised Book cum Worksheet for Class VIII Mathematics has been developed to support effective classroom transactions and competency-based learning. This material will ensure consistency and conceptual clarity across all Kendriya Vidyalayas under Guwahati Region.

Sh. R.K. Panigrahi
Assistant Commissioner
KVS, Guwahati Region

Message from Assistant Commissioner

"Dear , this resource is a dedicated tool to support your academic efforts. Embrace the opportunity for growth and success in your learning journey. We hope that you will find it useful and enjoyable."

Sh. N. Kumar
Assistant Commissioner
KVS, Guwahati Region

Message from Principal

This Rationalised Study Material for Class VIII Mathematics has been prepared to strengthen students' conceptual understanding in line with the rationalised syllabus. I am confident that it will be a useful academic resource for both teachers and students.

Sh. Seshanooj Sarkar
Principal
PM SHRI Kendriya Vidyalaya Rangia

Message from Principal

This Rationalised Study Material for Class VIII Mathematics is designed to help students strengthen their understanding of key concepts as per the rationalised syllabus. I am confident that this book will serve as a valuable academic resource for both teachers and learners.

Sh. Vivek Kumar
Principal
Kendriya Vidyalaya IIT GUWAHATI

Message from Principal

The Rationalised Study Material for Class VIII Mathematics is designed to enhance clarity of concepts as per the rationalised syllabus. I believe this book will serve as an effective learning and teaching resource for learners as well as educators.

Sh. Lokesh Gupta
Principal
PM SHRI Kendriya Vidyalaya Haflong

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CLASS 8 MATHEMATICS –SYLLABUS SPLIT UP(as per rationalised syllabus of part 2) for SEE 2025-26

- **PART – 1 should be completed up to (12 Jan – 21 Jan).**

Name of chapters	Period required	Date of Completion
FRACTION IN DISGUISE	4	24 Jan 2026
PROPORTIONAL REASONING -2	4	31 jan 2026
ALGEBRA PLAY	4	6 Feb 2026
AREA	4	10 Feb 2026
Revision	10 Feb onwards	
Syllabus for SEE	Part 1(i.e chapter 5,6,7) & Part 2(i.e chapter 1,3,6,7)	

BLUEPRINT FOR SESSION ENDING EXAMINATION CLASS VIII, SUBJECT: MATHEMATICS (GUWAHATI)

GANIT PRAKASH	**MARKS** **CHAPTER NAME**	**1 MARK** **(MCQ)**	**2 MARKS** **(SA)**	**3 MARKS**	**4 MARKS (CBQ)**	**5 MARKS**	
PART-1	**NUMBER PLAY**	**-**	**2(4)**		**1(4)**	**1(5)***	**13**
	WE DISTRIBUTE, YET THINGS MULTIPLY	**2**	**1(2)**	**2(6)**	**1(4)**		**14**
	PROPORTIONAL REASONING-1	**2**	**1(2)***	**2(6)**		**1(5)**	**15**
PART-2	**FRACTION IN DISGUISE**	**1**	**1(2)**	**1(3)***			**6**
	PROPORTIONAL REASONING -2	**1**	**1(2)**	**-**			**3**
	ALGEBRA PLAY	**1**	**1(2)***	**-**			**3**
	AREA		**1(2)**		**1(4)**		**6**
TOTAL		**7**	**16**	**15**	**12**	**10**	**60**

Chapter- Fractions in Disguise

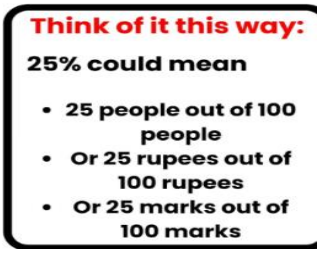
Have you ever heard announcements like "Mega Sale up to 50% off!" or someone saying "I scored 83% in my board exams"? That little symbol % is everywhere around us!
Let's discover what it really means and why it's so useful.

MEGA SALE UP TO 50% OFF

50% = 50/100
Behind every percent... there's a fraction!

Fractions as Percentage

The symbol % is read as "per cent".



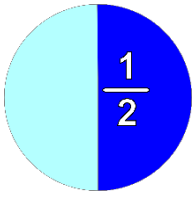
It comes from the Latin phrase 'per centum' which means 'by the hundred' or 'out of hundred'.

So when someone says 25%, they mean 25 out of every 100.

Understanding Percentages as Fractions Let's say you want to find 50% of some quantity s: 50% = 50 × (1/100) × s = (50/100) × s = (1/2) x s So percentages are simply fractions where the denominator is always 100! Examples: 20% = 20/100 = 2/10 = 1/5 33% = 33/100	**Expressing Fractions as Percentages** Example: In the bar model, the total prize money is divided into 5 equal parts. So each part represents: 1/5 = 20% Each part = 20% 0% 20% |40% |60% |80% |100% Savings for canvas = 40% Example: Isn't it the same as finding 2/5th of 100? Sol: Yes - it is the same as finding 2/5 of 100. Finding 2/5 of 100 means: So, 2/5 of 100 = 40.

Key Concepts

1. A fraction represents a part of a whole. It is written as:



Numerator / Denominator
Numerator: number of parts taken
Denominator: total equal parts
Example: 3/5 means 3 parts out of 5 equal parts.
½ means 1 part out of 2 equal parts

2. Equivalent Fractions – The Main Idea of “Fractions in Disguise” Two or more fractions are called equivalent fractions if they represent the same value, even if they look different. Their simplest forms are the same.

Example: 1/2 = 2/4 = 3/6
These fractions look different but represent the same portion of a whole. So, they are fractions in disguise.

3. How to Find Equivalent Fractions
(a) By Multiplying: If we multiply the numerator and denominator by the same non-zero number, the value of the fraction does not change.
Example:

2/3 × 2/2 = 4/6, 2/3 x 3/3 = 6/9, 2/3 x 4/4 = 8/12

(b) By Dividing: If we divide the numerator and denominator by the same non-zero number, the value remains the same. Find the HCF of Numerator and Denominator.
Num ÷ HCF
_____
Deno ÷ HCF
Example: 4/6 ÷ 2/2 = 2/3
40/60 ÷ 20/20 =2/3

4. Simplest Form of a Fraction
A fraction is in its simplest form when the numerator and denominator have no common factor other than 1.

Example: 12/18 → divide both by 6 → 2/3

5. Comparing Fractions Using Equivalent Fractions
To compare fractions, make their denominators the same by converting them into equivalent fractions.

Example: Compare 3/4 and 2/3
LCM of 4 and 3 = 12 3/4 = 9/12
2/3 = 8/12
So, 3/4 > 2/3

6. Visual Understanding
Equivalent fractions represent the same shaded area even though the number of parts may be different.

Example:
1/2 and 2/4 shade the same portion of a shape.

📝 **Practice Questions**

I. Multiple Choice Questions (MCQs)

1. Which of the following is equivalent to 3/5?
(a) 6/15 (b) 9/10 (c) 15/20 (d) 12/25

2. The simplest form of 8/24 is:
(a) 4/12 (b) 2/6 (c) 1/3 (d) 3/1

3. Which fraction is equal to 7/9?
(a) 14/18 (b) 21/25 (c) 7/18 (d) 28/35

4. If the numerator and denominator are multiplied by the same number, the fraction:
(a) Changes its value (b) Becomes zero (c) Remains the same (d) Becomes improper

5. If 25% of a number is 50, what is the number?

(a) 100 (b) 150 (c) 200 (d) 250

6.Which of the following represents 3 : 7 as a percentage?

(a) 30% (b) 42.85% (c) 70% (d) 21%

II. Short Answer Type Questions

1. Define equivalent fractions with examples
2. Find two equivalent fractions of 4/7.
3. Write the simplest form of 18/24.
4. Are 5/6 and 10/12 equivalent? Give reason.
5. Convert 3/4 into an equivalent fraction with denominator 20.
6. Convert 0.4 into a fraction and a percentage
7. The cost price of a pen is ₹20 and it is sold for ₹25. Find the percentage profit.
8. 12. If 40% of a journey is 80 km, find the total distance of the journey.

III. Long Answer Type Questions

1. Explain the concept of fractions in disguise with suitable examples.
2. Simplify the following fractions step by step:
   (a) 16/20 (b) 45/60
3. Compare the following fractions by converting them into equivalent fractions:
   (a) 5/6 and 7/9 (b) 3/5 and 4/10
4. Show that 2/3 and 8/12 represent the same value using multiplication and division methods.
5. Draw diagrams to show that 1/2, 2/4 and 4/8 are equivalent fractions.
6. A shopkeeper buys an article for ₹800 and sells it at a loss of 15%.

   (i) Find the selling price (ii) Find the loss incurred

7. The ratio of sugar to flour in a cake mixture is 3 : 5.

(i) What percentage of the mixture is sugar? (ii) If the total mixture weighs 400 g, how much sugar is used?

⭐ Quick Tip for Students
Always multiply or divide the numerator and denominator by the same number.
Equivalent fractions may look different but their value is always the same.

CHAPTER: PROPORTIONAL REASONING-2

CONCEPTS

1. Ratios in the form a : b : c : d : … indicate that for every a units of the first quantity, there are b units of the second quantity, c units of the third quantity, and so on.
2. If x is divided into many parts in the ratio p : q : r : s : …, then the quantity of the first part is $x \times p (p + q + r + s + …)$, the quantity of the second part is $x \times q (p + q + r + s + …)$, and so on.
3. Two quantities are directly proportional when they both change by the same factor, and their quotient remains the same. For example, if x and y are two quantities that are directly proportional, and (x_1, x_2, x_3, …) and (y_1, y_2, y_3, …) are the corresponding values of x and y, then $x_1/ y_1 = x_2 /y_2 = x_3/ y_3 = … = k$, where k is a constant.
4. Quantities are inversely proportional if, when one quantity changes by a factor n, the other quantity changes by the inverse 1/n. For example, if x and y are two quantities that are inversely proportional, and (x_1, x_2, x_3, …) and (y_1, y_2, y_3, …) are the corresponding values of x and y, then $x_1 y_1 = x_2 y_2 = x_3 y_3 = … … = n$, where n is a constant.

MCQ

1. If 24 pencils cost ₹120, how much will 20 such pencils cost?
   (i) Rs 100 (ii) Rs 200 (iii) Rs 80 (iv) Rs 50
2. If ‘x’ and ‘y’ are in a direct proportion then which of the following is correct?
   (i) x – y = constant (ii) x + y = constant (iii) x × y = constant (iv) $\frac{x}{y}$ = constant
3. If ‘x’ and ‘y’ are in an inverse variation then which of the following is correct?
   (i) x – y = constant (ii) x + y = constant (iii) xy = constant (iv) $\frac{x}{y}$ = constant
4. If the number of workers increases, the number of days required to complete a fixed work decreases. This relationship is:
   (i) Direct proportion (ii) Inverse proportion (iii) No proportion (iv) Equal proportion

VSA (2 MARKS)

5. If 5 workers can move 4500 bricks in a day, how many workers are needed to move 18000 bricks in a day?
6. Puneeth’s father went from Lucknow to Kanpur in 3 hours by riding his motorcycle at a speed of 30 km/h. If he takes a car instead and drives at 60 km/h, how long will it take him to reach Kanpur?
7. 20 workers take 4 days to complete laying a road. How many days will 10 workers take to complete laying the same length of road?
8. 2 pumps can fill a tank in 18 hours. How much time will it take to fill the tank if we add 2 more pumps of the same kind?
9. A school has food provisions to feed 80 students for 15 days. If 20 more students join the school, for how many days will the provisions last?

SA (3 MARKS)

10. To make a special shade of purple, paint must be mixed in the ratio, Red : Blue : White :: 2 : 3 : 5. If Yasmin has 10 litres of white paint, how many litres of red and blue paint should she add to get the same shade of purple?
11. A cricket coach schedules practice sessions that include different activities in a specific ratio — time for warm-up/cool-down : time for batting : time for bowling : time for fielding :: 3 : 4 : 3 : 5. If each session is 150 minutes long, how much time is spent on each activity?

12. A school library has books in different languages in the following ratio — no. of Odiya books : no. of Hindi books : no. of English books :: 3 : 2 : 1. If the library has 288 Odiya books, how many Hindi and English books does it have?
13. I have 100 coins in the ratio — no. of ₹10 coins : no. of ₹5 coins : no. of ₹2 coins : no. of ₹1 coins :: 4 : 3 : 2 : 1. How much money do I have in coins?

LA (5 MARKS)

14. Which of the following pairs of quantities are in inverse proportion and which in direct proportion?

(i) The number of taps filling a water tank and the time taken to fill it.
(ii) The number of painters hired and the days needed to paint a wall of fixed size.
(iii) The distance a car can travel and the amount of petrol in the tank.
(iv) The speed of a cyclist and the time taken to cover a fixed route.
(v) The length of cloth bought and the price paid at a fixed rate per metre.

15. Which of these are in inverse proportion?

(i)

x	40	80	25	16
y	20	10	32	50

(ii)

x	40	80	25	16
y	20	10	12.5	8

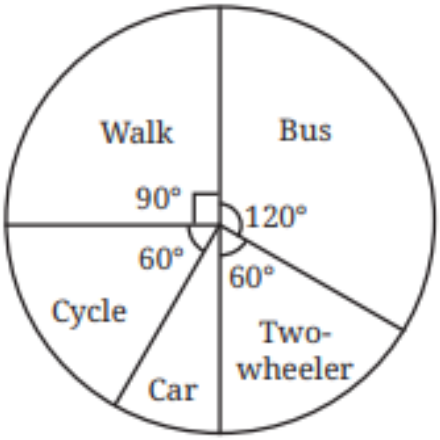
(iii)

x	30	90	150	10
y	15	5	3	45

CASE BASED QUESTION (4 MARKS)

16. The pie chart on the right shows the result of a survey carried out to find the modes of transport used by children to go to school. Study the pie chart and answer the following questions.

(i) What is the most common mode of transport?
(ii) What fraction of children travel by car?
(iii) If 18 children travel by car, how many children took part in the survey? How many children use taxis to travel to school?
(iv) By which two modes of transport are equal numbers of children travelling?



CHAPTER: ALGEBRA PLAY

1. **Think of a Number Tricks**-How did Shubham figure out the date chosen by Mukta?

a)Let the month be M and the day be D. b) Multiply M by 5: $5M$ c)Add 6: $5M + 6$

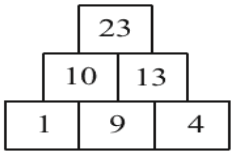
d)Multiply by 4: $20M + 24$ e)Add 9: $20M + 33$ f)Multiply by 5: $100M + 165$

g)Add the day: $100M + 165 + D$ Mukta's answer was 291.

h)$291 = 100M + 165 + D$ i) $291 - 165 = 100M + D$ j)$126 = 100M + D$

Since D is a day within a month, it is atmost 31 and requires only 2 digits. So the last 2 digits are D and what comes before that is M. In this case, M is 1 and D is 26, i.e., the 26th of January.

2. **Number Pyramids** - In a number pyramid, each number is the sum of the two numbers directly below it (see the figure).



AUGUST 2025

SUN	MON	TUE	WED	THU
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28
31				

3. **Fun with Grids** –

A page from a calendar is given below. Your friend picks a 2 × 2 grid from this calendar, adds the 4 numbers in this grid and tells you the sum. Consider a 2 × 2 grid. Let a represent the top left number. What are the other numbers in terms of a?

a	$a + 1$
$a + 7$	$a + 8$

Adding all four numbers, the sum is $a + (a + 1) + (a + 7) + (a + 8) = 4a + 16$.

Suppose you are told that the sum is 36. Can you find the 4 numbers in the grid?

$4a + 16 = 36$ $4a = 20$ (subtracting 16 from both sides) # $a = 5$ (dividing both sides by 4)

Now that we have found a, we know that the other three numbers are $a + 1$, $a + 7$ and $a + 8$. Therefore, the grid must be the following:

5	6
12	13

4.The Largest Product- Suppose p, q, and r are the three digits such that $p < q < r$.

we have six possible products, which we group by the multiplier:

$qr \times p$, $rq \times p$,$pr \times q$, $rp \times q$,$pq \times r$, $qp \times r$

In each pair, the multiplicand with the larger tens digit forms the larger product. So we have three products to compare:

$rq \times p$,$rp \times q$,$qp \times r$

Since $q > p$, we can see that $rp \times q$ is bigger than $rq \times p$. This leaves us with a comparison between $qp \times r$ and $rp \times q$. If we expand these, we get

$qp \times r = (10 \times q \times r) + (p \times r)$ $rp \times q = (10 \times r \times q) + (p \times q)$

Once again, the first term is the same in both expressions. Since $r > q$ the second term of the first expression is larger, so the largest product is $qp \times r$. This matches our earlier observation that the largest digit should be the multiplier and the other two digits should be arranged in decreasing order to form the multiplicand.

5. **Algebra Grids -**In the following grid, shapes represent numbers. In each row, the last column is the sum of the values to its left. How do we find the values of the shapes?

MCQ

1. Solve: x+7=15
   a) 6 b) 7 c) 8 d) 9

2.The value of 3x when x=4 is
a) 7 b) 12 c) 16 d) 24

3. The coefficient of x in 7x+3is:
a) 3 b) 7 c) x d) 10

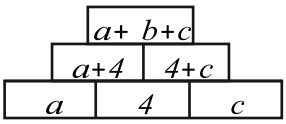
4.Which is an algebraic expression?
a) 5 + 7 b) 3 × 4 c) 2x+12 d) 9 ÷ 3

VSA (2 MARKS)

5. Form an equation: a)The sum of a number and 8 is 20. b) Five times a number decreased by 7.
6. Fill the digits 1, 3, and 7 in to make ☐☐ × ☐ the largest product possible.

7.Fill the digits 3, 5, and 9 in to make ☐☐ × ☐ the largest product possible.

8. Using letter numbers for the bottom row, we can write an expression for the top row.
Find b from below pyramid.



9. Simplify and find the value of 2x-5-3x+4 when x=3.

SA (3 MARKS)

10. Suppose the two-digit number is *ab*. When it is reversed, the new number is *ba*. , find their sum. What will happen? For example:

- We start with 31. After reversing we get 13. Adding 31 and 13, we get 44.
- We start with 28. After reversing we get 82. Adding 28 and 82, we get 110.

Observe that all these numbers are divisible by 11. Is this always true? justify this claim using algebra?

11. Simplify: a) 5x+3x−6 b)4y-7y +4 c) 3-6a+9a

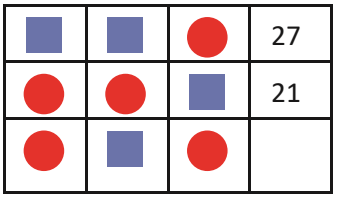
12. Without building the entire pyramid, find the number in the topmost row given the bottom row in each of these cases.

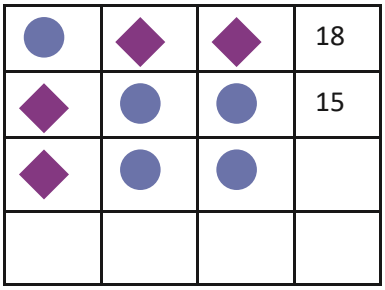
8	19	21	13

7	18	19	6

9	7	5	11

13. In the following grids, find the values of the shapes and fill in the empty squares:





CASE BASED QUESTION (4 MARKS)

14. A page from a calendar is given below. Your friend picks a 2 × 2 grid from this calendar, adds the 4 number in this grid and tells you the sum is 56.Then find x,y,p,q.

x	y
p	q

AUGUST 2025						
SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

15.By using this trick

a) Let the month be *M* and the day be *D.*

b) Multiply *M* by 5: 5*M*

c) Add 6: 5*M* + 6

d) Multiply by 4: 20*M* + 24

e) Add 9: 20*M* + 33

f) Multiply by 5: 100*M* + 165

g) Add the day: 100*M* + 165 + *D* Mukta's answer was 291.

h)291 = 100*M* + 165 + *D*

i) 291 – 165 = 100*M* + *D*

j)126 = 100*M* + *D*

Find the dates if the final answers are the following:

(i) 1269

(ii) 394

(iii) 296

16. A mother is 5 times her daughter's age. In 6 years' time, the mother will be 3 times her daughter's age. How old is the daughter now? Write the algebraic equation also.

Chapter Name: "Area", Part A: Summary of the Basic Concepts

Understanding Area

Area means the space or region covered by a flat shape. When we color a picture, the area tells us how much coloring material we need. We measure area by counting the number of unit squares (1 cm x 1 cm) that fit inside a shape.

Why Not Use Perimeter Instead of Area?

The perimeter is only the length of the boundary or edge. Two shapes can have the same perimeter but different areas. Therefore, we must use area, not perimeter, to measure how much space a shape takes up.

Formulas for Common Shapes

1. Rectangle and Square

For a Rectangle:
Area = length x width

For a Square:
Area = side x side

---

2. Triangle

Area of a Triangle:
Area = (1/2) x base x height

Note: The height must be measured perpendicular (at right angles) to the base, not along any slanted side.

Key Concept: A triangle is half of a rectangle, formed by drawing a diagonal that creates two equal triangles. Thus, the area formula is half the base times the height.

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3. Parallelogram

Area of a Parallelogram:
Area = base x height

The height must be measured perpendicular to the base.

Key Concept: A parallelogram is a shape with opposite sides parallel and equal. Even though it looks slanted, we can cut and rearrange it into a rectangle. Therefore, it uses the same area formula as a rectangle.

---

4. Rhombus

A rhombus is a special parallelogram where all four sides are equal in length.

Area of a Rhombus:
Area = (1/2) x diagonal 1 x diagonal 2

A diagonal is a line drawn from one corner to the opposite corner. The two diagonals of a rhombus cut each other at right angles (90 degrees).

Key Concept: The diagonals divide the rhombus into four equal triangles. By using both diagonals and dividing by 2, we get the total area.

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5. Trapezium (Trapezoid)

A trapezium has exactly one pair of parallel sides (the two bases).

Area of a Trapezium:
Area = (1/2) x height x (sum of parallel sides)
Or written as: Area = (1/2) x h x (a + b)

Where:

- h is the perpendicular distance between the two parallel sides
- a and b are the lengths of the two parallel sides

Key Concept: The two parallel sides are called bases. The perpendicular distance between them is the height. We add both bases and multiply by half the height.

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6. Any Polygon

For any polygon with many sides, we can find the area by:

1. Draw diagonal lines from one corner to divide the polygon into triangles
2. Find the area of each triangle using Area = (1/2) x base x height
3. Add all the triangle areas together

Key Concept: Any polygon can be broken down into triangles, so if you can find the area of a triangle, you can see the area of any polygon.

Important Points to Remember

- Always use the correct measurements. The height must be perpendicular (at 90 degrees) to the base.
- Area is measured in square units like square cm (cm^2), square m (m^2), or square inches (in^2).
- A diagonal divides a rectangle into two equal triangles.
- When a parallelogram is slanted, it still has the same area as a rectangle with the same base and height.
- We can transform one shape into another shape with equal area by cutting and rearranging the pieces.

Summary Table: All Formulas at a Glance

Shape	Area Formula
Rectangle	length x width
Square	side x side
Triangle	(1/2) x base x height
Parallelogram	base x height
Rhombus	(1/2) x diagonal1 x diagonal2
Trapezium	(1/2) x height x (base1 + base2)
Any Polygon	Sum of all triangle areas

Part B

Section A: Multiple Choice Questions

1. A rectangular field has an area of 120 m^2 and a length of 15 meters. What is its width?
   a) 6 meters b) 8 meters c) 10 meters d) 12 meters

2. If each side of a square is doubled, its area becomes:
   a) Double b) Triple c) Four times d) Eight times

3. The diagonal of a rectangle divides it into two triangles. If the rectangle has an area of 40 cm^2, the area of each triangle is:
   a) 10 cm^2 b) 20 cm^2 c) 40 cm^2 d) 80 cm^2

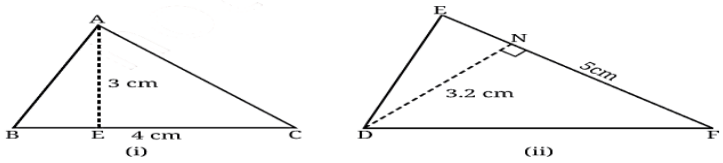
4. If the base of a parallelogram is 20 cm and its height is 9 cm, its area is:
   a) 29 cm^2 b) 58 cm^2 c) 90 cm^2 d) 180 cm^2

5. The area of a rhombus is 60 cm^2. If one diagonal is 10 cm, the other diagonal measures:
   a) 6 cm b) 8 cm c) 12 cm d) 15 cm

6. Two rectangles have the same area of 48 cm^2. Rectangle A has dimensions 8 cm by 6 cm. Which could be the dimensions of Rectangle B?
   a) 10 cm x 5 cm b) 12 cm x 4 cm c) 16 cm x 2 cm d) Both b and c

Section B: Short Answer Type Questions

7. Find the areas of the following triangles:

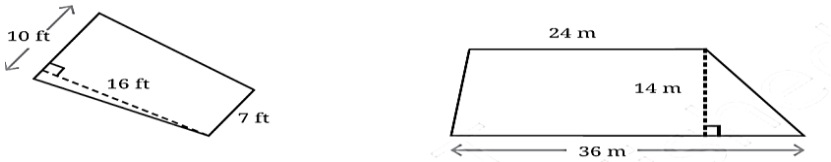


8. Find the areas of the following parallelograms:

9. A trapezium has parallel sides of 6 cm and 8 cm. If its area is 42 cm², find the perpendicular distance between the parallel sides.

10. Find the area of a rhombus whose diagonals are 20 cm and 15 cm.

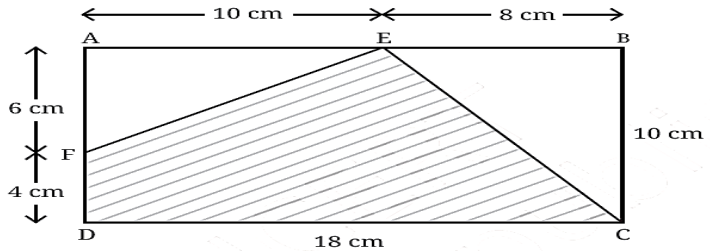
11. Find the areas of the following figures:



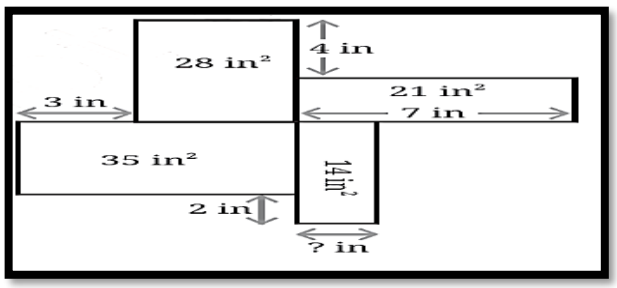
12. A rectangular path of width 2 meters is laid around the inside of a rectangular park that measures 20 meters by 15 meters. Find the area of the path.

Section C: Long Answer Type Questions

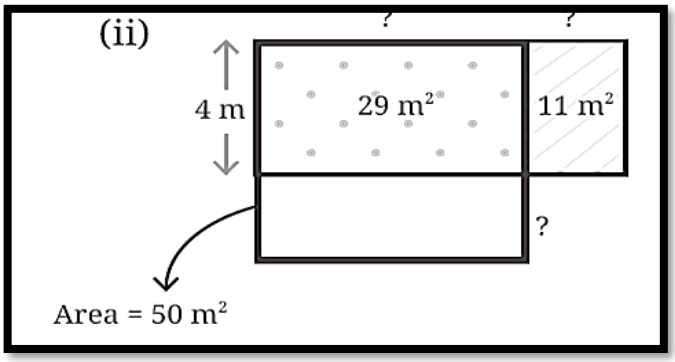
13. Find the area of the shaded region given that ABCD is a rectangle:



14. Identify the missing side length in the following figure:



15. Identify the missing side length in the following figure:



Section D: Case-Based Question

Scenario: School Renovation Project

16. A school is planning to renovate its classrooms and outdoor spaces. The school has:

- A rectangular main building measuring 60 meters in length and 40 meters in width,
- A triangular playground with a base of 50 meters and a height of 35 meters,
- A quadrilateral courtyard that can be divided by a diagonal into two triangles with areas of 180 m^2 and 220 m^2, respectively.

The principal wants to:

a. Paint the walls of the main building (rectangular base)

b. Install tiles in the triangular playground

c. Calculate the total area of the courtyard for construction purposes

Answer the following questions based on the scenario:

(i) Calculate the area of the rectangular main building. What is the perimeter of the main building

(ii) Calculate the area of the triangular playground. If tiles cost Rs. 100 per m^2, what will be the cost of tiling the entire playground?

(iii) The courtyard is divided by a diagonal into two triangular sections. What is the total area of the courtyard? Express this as a fraction of the main building's location.