Maths Makes Everything Possible!

CLASS 6 MATHEMATICS

SUMMER HOLIDAY HOMEWORK

MAY – JUNE 2026

Think → Solve → Apply → Grow!

SECTION A – NUMBER SYSTEM

1. Number Exploration

Write any 10 large numbers (up to 1,00,000).

For each number:

- Write its number name
- Write its expanded form
- Identify the place value of any one digit

Number	Place Value (of any one digit)
56,789	7 → 700

TTh	Th	H	T	O
5	6	7	8	9

2. Factors & Multiples

Find:

- Factors of the given numbers
- Multiples of the given numbers

Factors of 12: 1, 2, 3, 4, 6, 12

SECTION B – OPERATIONS

3. Addition & Subtraction

Solve daily:

- 10 addition sums
- 10 subtraction sums

$$\begin{array}{r} 7865 \\ +\ 2347 \\ \hline 10212 \end{array}$$

4. Multiplication & Division

Practice:

- 3-digit × 2-digit
- Division problems

$$\begin{array}{r} 342 \\ \times\ 26 \\ \hline 2052 \\ 6840 \\ \hline 8892 \end{array}$$

$$42\overline{)3780}\quad \begin{array}{r} 90 \\ 90 \\ \hline 378 \\ 378 \\ \hline 0 \end{array}$$

SECTION C – FRACTIONS

5. Fractions

Solve:

- Like and unlike fractions
- Addition and subtraction

$$\frac{3}{4} + \frac{2}{4} = \frac{5}{4}$$

$$\frac{5}{6} - \frac{1}{6} = \frac{4}{6}$$

6. Simplification

Simplify the given fractions. $\frac{6}{8} = \frac{3}{4}$ $\frac{9}{12} = \frac{3}{4}$

SECTION D – MEASUREMENT

7. Length, Weight & Capacity

Solve problems using:

- m, cm, km
- g, kg
- ml, l

cm kg ml

8. Time

Solve time-based problems.

03:25

SECTION E – GEOMETRY

9. Shapes & Angles

Draw and label:

- Types of angles
- Basic shapes

Acute Right Obtuse Straight

Square Rectangle Triangle Circle

10. Symmetry

Draw figures showing symmetry.

SECTION F – REAL LIFE MATHS

11. Money Activity

Prepare a bill of 5 items. Calculate the total amount and balance.

ITEM	PRICE (₹)
Notebook	50
Pen	20
Pencil	10
Eraser	15
Sharpener	25

You have ₹200. Find the balance.

12. Budget Planning

Plan a simple budget (with ₹200 – ₹500).

BUDGET

- Savings
- Needs
- Wants

SECTION G – THINKING SKILLS

13. Word Problems

Solve real-life word problems.

If a pack has 24 pencils and I buy 3 packs, how many pencils do I have?

14. Patterns & Puzzles

Solve the number patterns.

Create your own puzzle.

SECTION H – PROJECT WORK

15. Maths Scrapbook

Make a scrapbook including:

- Fractions
- Shapes
- Real-life maths examples

Shopping List

Item	Price
Book	60
Bag	120
Bottle	80

16. Maths Around Me

Observe and write:

- Shapes in your surroundings
- Use of maths in daily life

STOP

SUBMISSION GUIDELINES

- ☑ Maintain a neat and organized notebook/file.
- ☑ Use diagrams, colours and proper steps.
- ☑ Practice regularly.
- ☑ Submit after the holidays.

Practice Today, Success Tomorrow!

WHY THIS HOMEWORK IS SPECIAL

- Builds strong mathematical foundation
- Improves logical thinking
- Applies maths in real life
- Makes learning fun and meaningful!

Maths makes your mind sharp and your future bright!

CLASS 7 – MATHEMATICS

SUMMER HOLIDAY HOMEWORK

MAY – JUNE 2026

Think • Practice • Solve • Excel!

MATHS
LOGIC
LEARN
GROW

SECTION A – NUMBER SYSTEM

1. Task 1: Number Exploration

Write any 10 numbers (up to 10,00,000).

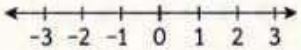
For each number:

- Write number name
- Write expanded form
- Find place value of any one digit

Number	Number Name
2,45,678	Two lakh forty five thousand six hundred seventy eight
2,00,000 + 40,000 + 5,000 + 600 + 70 + 8	
Place value of 6 = 600	

2. Task 2: Integers

Represent integers on number line.



Solve:

- Addition of integers
- Subtraction of integers

3. Task 3: Fractions & Decimals

Solve:

- Addition and subtraction of fractions
- Conversion between fractions and decimals



SECTION B – OPERATIONS

4. Task 4: Rational Numbers

Perform operations:

- Addition
- Subtraction
- Multiplication

$\frac{3}{4} + \frac{2}{5} = \frac{23}{20}$

$\frac{7}{6} - \frac{1}{3} = \frac{5}{6}$

$\frac{2}{3} \times \frac{3}{5} = \frac{2}{5}$

5. Task 5: Simplification

Solve expressions using BODMAS.

$24 \div 3 + 5 \times 2 - 4$

$= 8 + 10 - 4$

$= 14$

SECTION C – ALGEBRA

6. Task 6: Algebraic Expressions

Write and simplify algebraic expressions.

Example: $3x + 5x - 2x + 7$

7. Task 7: Simple Equations

Solve linear equations.

Example: $2x + 5 = 19$

$x = ?$

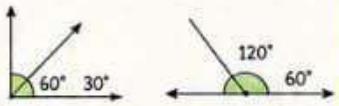


SECTION D – GEOMETRY

8. Task 8: Lines & Angles

Draw and label:

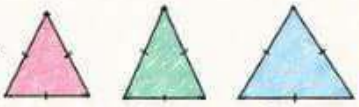
- Complementary angles
- Supplementary angles



Complementary | Supplementary

9. Task 9: Triangles

Draw different types of triangles and write their properties.



Equilateral (All sides equal) | Isosceles (Two sides equal) | Scalene (All sides different)

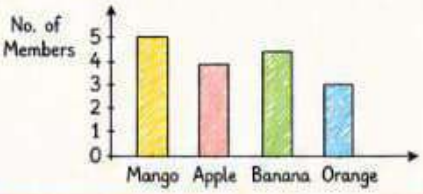
SECTION E – DATA HANDLING

10. Task 10: Data Collection

Collect data from your family (e.g., favourite fruits).

Represent the data using a Bar Graph.

Fruit	No. of Family Members
Mango	5
Apple	3
Banana	4
Orange	2



SECTION F – REAL LIFE MATHS

11. Task 11: Shopping Activity

Prepare a bill of 6 items.

Calculate:

- Total cost
- Discount (if any)

Item	Price (₹)
Notebook	40
Pen	20
Pencil	10
Eraser	10
Sharpener	10
Ruler	20
Total	₹110
Discount	10%
Payable Amount	₹99

12. Task 12: Budget Planning

Plan a weekly budget.



SECTION G – THINKING SKILLS

13. Task 13: Word Problems

Solve real-life based problems.

Example:

A shopkeeper buys 12 pens for ₹120 and sells them at ₹12 each. Find his profit or loss.



14. Task 14: Puzzles

Solve number puzzles.

Create your own puzzle.

2	7	6
9	5	1
4	3	?

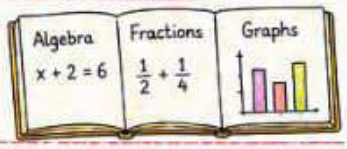


SECTION H – PROJECT WORK

15. Task 15: Maths Scrapbook

Make a scrapbook including:

- Algebra
- Fractions
- Graphs



16. Task 16: Maths Around Me

Observe and write:

- Use of maths in daily life
- Shapes around you



SUBMISSION GUIDELINES



- ☑ Maintain a neat and well-organized notebook/file.
- ☑ Show proper steps in solutions.
- ☑ Use diagrams, colours and creativity.
- ☑ Practice regularly.
- ☑ Submit after holidays.

WHY THIS HOMEWORK IS SPECIAL

- Builds strong mathematical foundation.
- Improves logical reasoning
- Applies maths practically
- Makes learning meaningful and enjoyable!

Practice Today, Success Tomorrow!

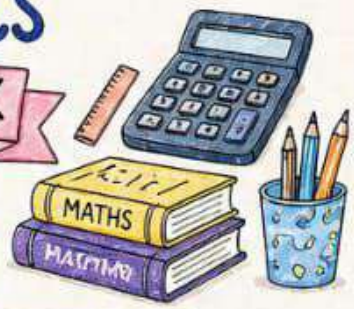
Maths is not just numbers, it's a way of thinking!

CLASS 8 – MATHEMATICS

SUMMER HOLIDAY HOMEWORK

MAY – JUNE 2026

Think • Solve • Learn • Apply • Excel



SECTION A – NUMBER SYSTEM

1. Task 1: Number Exploration

Write any 10 numbers (up to 1,00,00,000).

For each number:

- ☆ Write number name
- ☆ Write expanded form
- ☆ Find place value of any one digit

T	L	TTh	Th	H	T	O
2	3	5	7	4	8	6

Expanded form:
2,00,00,000 + 30,00,000 + 5,00,000 + 70,000 + 4,000 + 800 + 6

2. Task 2: Rational Numbers

Perform operations:

- ☆ Addition
- ☆ Subtraction
- ☆ Multiplication
- ☆ Division

$$\frac{2}{3} + \frac{1}{6} = ?$$

SECTION B – OPERATIONS

3. Task 3: Squares & Cubes

Find squares and cubes of numbers from 1 to 20.

$5^2 = 25$ $5^3 = 125$

4. Task 4: Simplification

Solve expressions using BODMAS.

$18 \div 3 + 4 \times 2 - 5$

$= ?$

BODMAS

- B – Brackets
- O – Of
- D – Division
- M – Multiplication
- A – Addition
- S – Subtraction

SECTION C – ALGEBRA

5. Task 5: Algebraic Expressions

Simplify expressions.

- ☆ $3x + 5y - 2x + y$
- ☆ $4a - 3b + 2a - b + 6$

$2x + 3y$

6. Task 6: Linear Equations

Solve linear equations in one variable.

- ☆ $3x + 7 = 22$
- ☆ $5(x - 4) = 15$
- ☆ $7x - 9 = 26$

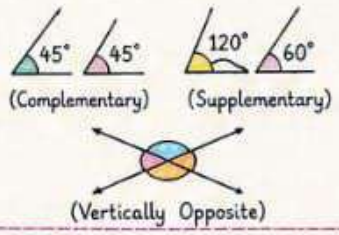


SECTION D – GEOMETRY

7. Task 7: Lines & Angles

Draw and label:

- ☆ Complementary angles
- ☆ Supplementary angles
- ☆ Vertically opposite angles



8. Task 8: Quadrilaterals

Draw the following types of quadrilaterals and write their properties.



SECTION E – DATA HANDLING

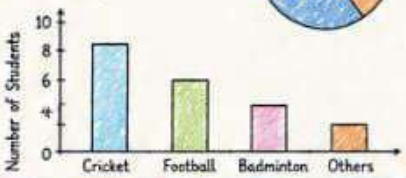
9. Task 9: Data Collection

Collect data on any one topic (e.g., favourite sports of your friends).

Represent the data using:

- ☆ Bar Graph
- ☆ Pie Chart





SECTION F – REAL LIFE MATHS

10. Task 10: Profit & Loss

Prepare examples based on:

- ☆ Profit
- ☆ Loss
- ☆ Discount



11. Task 11: Budget Planning

Plan a weekly or monthly budget.

Include:

- ☆ Income
- ☆ Expenses
- ☆ Savings



SECTION G – THINKING SKILLS

12. Task 12: Word Problems

Solve real-life based problems.

Examples:

- ☆ A shopkeeper bought 40 items at ₹25 each and sold at ₹35 each. Find his profit.
- ☆ The perimeter of a rectangular field is 220 m. If its length is 65 m, find its breadth.

13. Task 13: Puzzles & Patterns

Solve the number puzzles.

Examples:

- ☆ Find the next number: 2, 6, 12, 20, 30, ?
- ☆ Create your own pattern and let your friends solve it.



SECTION H – PROJECT WORK

14. Task 14: Maths Scrapbook

Make a scrapbook including:

- ☆ Important formulas
- ☆ Algebra concepts
- ☆ Graphs
- ☆ Real-life applications



15. Task 15: Maths Around Me

Observe and write:

- ☆ Use of maths in daily life
- ☆ Shapes and patterns around you





SUBMISSION GUIDELINES

- ☑ Maintain a neat and well-organized notebook or file.
- ☑ Show all steps clearly.
- ☑ Use diagrams and colours.
- ☑ Submit after the holidays.

Remember!

- ♡ Practice daily
- ♡ Be curious
- ♡ Stay consistent
- ♡ Enjoy learning maths!



WHY THIS HOMEWORK IS SPECIAL

- ☆ Builds strong mathematical foundation
- ☆ Enhances logical reasoning
- ☆ Applies maths in real life
- ☆ Makes learning fun and meaningful



LET'S MAKE THIS SUMMER PRODUCTIVE AND FUN WITH MATHS!

PM SHRI KENDRIYA VIDYALAYA DHARMAPURI 636704
SUMMER VACATION HOLIDAY HOMEWORK (2026-27)
SUBJECTS: MATHEMATICS (041)
CLASS: IX

1. Is zero a rational number? Can you write it in the form p/q where p and q are integers and q ≠ 0?
2. Find six rational numbers between 7 and 8.
3. Find five rational numbers between $\frac{3}{4}$ and $\frac{4}{5}$.
4. State whether the following statements are true or false. Give reasons for your answers.

   (i) Every natural number is a whole number.

   (ii) Every integer is a whole number.

   (iii) Every integer is a rational number.

5. Simplify:

   (i) $(2x + 5y)^2$ (ii) $(5p - 2q)^2$ (iii) $16x^2 - 25y^2$

6. Write the degree of each of the following polynomials. And classify as linear, quadratic and cubic polynomials.
   (i) $5x^3 + 4x^2 + 7x$
   (ii) $4 - y^2$
   (iii) $5t - \sqrt{7}$
   (iv) 3
7. Plot the points (x, y) given in the following table on the plane, choosing suitable units of distance on the axes.

   i. $(-2, 8)$ ii. $(0, -1.25)$ iii. $(3, -1)$

   iv. $(1, 3)$ v. $(-1, 7)$ vi. $(-5, -7)$

8. In which quadrant or on which axis do each of the points (– 2, 4), (3, – 1), (– 1, 0), (1, 2) and (– 3, – 5) lie? Verify your answer by locating them on the Cartesian plane.

9. Find the lateral surface area, total surface area and volume of a cuboid of length 80 cm, breadth 40 cm and height 20 cm.

10. Find the lateral surface area, total surface area and volume of a cube of edge 10 cm.

11. The length, breadth, and height of a room are 5 m, 4 m and 3 m respectively. Find the cost of white washing the walls of the room and the ceiling at the rate of Rs 7.50 m^2.

12. A 4 cm cube is cut into 1 cm cubes. Calculate the total surface area of all the small cubes.

13. A cuboidal water tank is 6 m long, 5 m wide and 4.5 m deep. How many liters of water can it hold?

14. Find the cost of digging a cuboidal pit 8 m long, 6 m broad and 3 m deep at the rate of Rs 30 per m^3.

15. In Fig. 6.14, lines XY and MN intersect at O. If ∠POY = 90° and a : b = 2 : 3, find c.

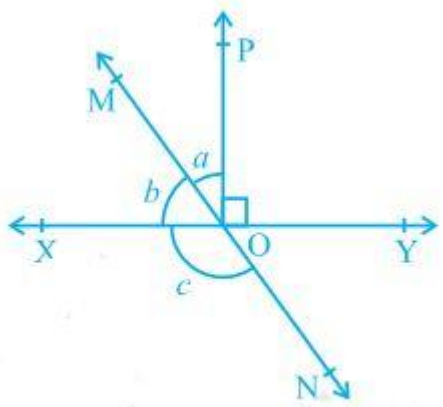


Fig. 6.14

16. In Fig. 6.28, find the values of x and y and then show that AB || CD.

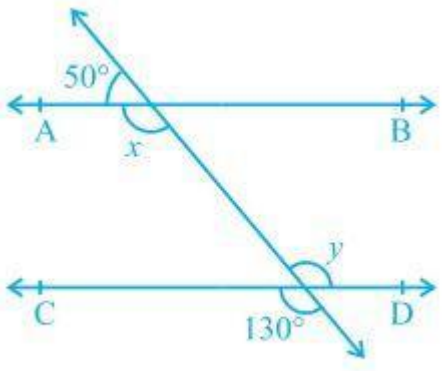


Fig. 6.28

17. In Fig. 6.29, if AB || CD, CD || EF and y : z = 3 : 7, find x.

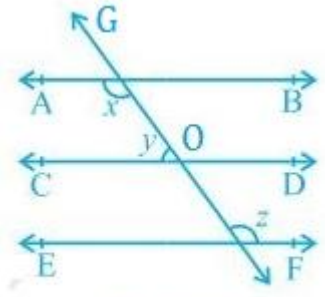


Fig. 6.29

18. In quadrilateral ACBD, AC = AD and AB bisect ∠A (see Fig. 7.16). Show that ΔABC≅ ΔABD. What can you say about BC and BD?

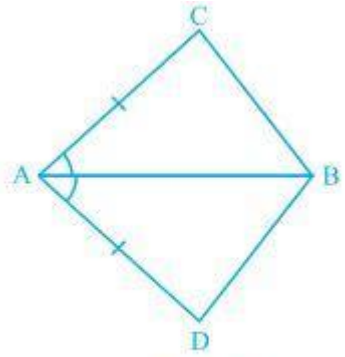


Fig. 7.16

19. Define congruent triangles. Give an example.
20. List all the criteria for triangle congruency. What does the symbol ≅ mean in geometry?
21. In ΔABC and ΔDEF, AB = DE, BC = EF, and AC = DF. Are the triangles congruent? State the rule.
22. In ΔPQR and ΔXYZ, PQ = XY, ∠Q = ∠Y, and QR = YZ. Prove that ΔPQR ≅ ΔXYZ.
23. In ΔABC and ΔDEF, ∠A = ∠D, AB = DE, and ∠B = ∠E. Are the triangles congruent? Justify.
24. State the RHS congruency rule. In right triangles ΔABC and ΔDEF, ∠B = ∠E = 90°, AC = DF (hypotenuse), and AB = DE. Prove that ΔABC ≅ ΔDEF.
25. Find mean, median, and mode for: 3, 7, 7, 2, 9, 10, 7.
26. The heights (in cm) of students are: 150, 155, 160, 150, 165, 150. Find mean, median, and mode.

PM SHRI KENDRIYA VIDYALAYA DHARMAPURI 636704
SUMMER VACATION HOLIDAY HOMEWORK (2026-27)
SUBJECTS: MATHEMATICS (041)
CLASS: X

General Instructions for Students

- Complete all the homework neatly in Homework notebook.
- Show all the steps and calculations clearly for Mathematics problems.
- Use a pencil for diagrams and graphs wherever required.
- Revise the related concepts before attempting the questions.
- Submit the homework on time after the vacation.

1. Express each number as a product of its prime factors:
   (i) 10395 (ii) 39204 (iii) 27000 (iv) 4199 (v) 5005
2. Given that HCF (420, 525) = 21, find (420, 525).
3. Show that $\sqrt{2}$ is an irrational number.
4. Show that $\sqrt{5}$ is an irrational number.
5. Prove that $4 + 3\sqrt{5}$ is irrational.
6. Prove that the product of three consecutive positive integers is divisible by 6.
7. There is a circular path around a field car A takes 1 hour 20 minutes to complete one round while car B takes 2 hours to complete the same if they both cars start at same time and move in same direction after how much time will they meet again at the starting point.
8. Find the smallest number which when divided by 45 and 189 leaves the remainder 12 in each case.
9. Find the largest number which divides 82 and 150 leaving remainder 5 and 7 respectively.
10. Two numbers are in ratio 5:8 and their LCM is 240. Find the numbers and explain the reasoning.
11. Three alarm clocks ring their alarms at regular interval of 15 min, 35 min and 45 min respectively. If the first beep together at 6 AM at what time will they beep again for the first time?
12. Check whether 12^n can end with the Zero for any natural number n.
13. Two numbers are in the ratio 7 : 11 if their HCF is 9 then find their LCM.
14. For each of the following, find a quadratic polynomial whose sum and product respectively of the zeros are as given.
    i) $-5, 7$ ii) $-\sqrt{2}, -1$ iii) $-\frac{1}{2}, 7$
15. Find the zeros of the polynomial $x^2 + \frac{1}{6}x - 2$, and verify the relation between the coefficient and zeros of the polynomial.

16. Find the zeros of the polynomial $6x^2 + x - 2$, and verify the relation between the coefficient and zeros of the polynomial.
17. Construct a quadratic polynomial whose zeros are reciprocals of the zeros of $x^2 - 5x + 6$.
18. Construct a quadratic polynomial whose zeros differ by 4 and sum is 6.
19. If α and β are the zeros of quadratic polynomial $x^2 - 5x + 3$, then find the values of :

(i) $\alpha^3 + \beta^3$ (ii) $\alpha - \beta$ (iii) $\frac{1}{\alpha} - \frac{1}{\beta}$

(iv) $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$ (v) $\alpha^2 + \beta^2$ (vi) $\alpha^2 - \beta^2$

20. Find the zeros of each of the following quadratic polynomials and verify the relationship between the zeros and their coefficients:

i) $5x^2 - 4 - x$ ii) $z^2 - 14z + 48$

iii) $y^2 - \frac{1}{3}y - \frac{2}{3}$ iv) $3t^2 - 2t - 8$

21. If the sum of the zeros of the quadratic polynomial $kt^2 - 7t + 3k$ is equal to their product, find the value of k
22. Without plotting, determine whether the lines $2x + 3y = 6$ and $4x + 6y = 12$ will intersect, be parallel, or coincide. Explain.
23. Solve the following system of linear equations $7x - 2y = 5$ and $8x + 7y = 15$ and verify your answer.
24. The sum of present ages of two persons is 60. Five years ago, the elder was 3 times the younger. Find their ages and check if condition holds after 10 years.
25. A shopkeeper sells pens and pencils. Total items sold are 80 and total money earned is ₹200. Form linear equations if a pen costs ₹3 more than a pencil.
26. A fraction is equal $\frac{4}{5}$ when 1 is added to both numerator and denominator and equal $\frac{1}{2}$ when 2 is added to denominator. Find the fraction.
27. Two numbers are in ratio 3:5. If 4 is added to both numbers, the ratio becomes 1:2. Form equations and explain why ratio changes lead to linear equations.
28. A father is 3 times as old as his son. After 12 years, he will be twice as old. Form equations and explain why time shift changes relationships.
29. The numerator of a fraction is 3 less than the denominator. If both are increased by 5, the fraction becomes $\frac{4}{5}$. Find the fraction.
30. A fraction becomes 1 when numerator and denominator are increased by 1. If numerator is doubled and denominator is increased by 3, it becomes $\frac{3}{2}$. Find the fraction.