NCERT Class 8 maths: Ganita Prakash Part I chapter guide

Visual learning guide - Maths · Class 8

Follow the models and 5 worked cases, then try 14 questions with explanations. Save the guide or worksheet for another day.

Start with the key idea

This guide uses the verified seven-chapter Ganita Prakash Grade 8 Part I contents. The official file records first edition July 2025, reprint January 2026 and 2026-27 printing. Original examples connect selected concepts to practice. This is not a complete current Class 8 syllabus or a verified map of Part II.

1. Check the part before using the chapter map

Match Grade 8, Ganita Prakash, the language and Part I against the school's book. Record the edition and reprint information from the publication page. A search result headed "Class 8 maths" may still describe a different textbook with different chapters.

The seven verified Part I titles are listed below. Their presence in the official contents supports this map, but it does not establish every topic assigned by an individual school. Use the teacher's plan to identify the order and any additional material.

If the child uses another part, obtain that part's contents rather than extending the list from memory. The examples here are original supporting practice, not NCERT exercise answers. They are deliberately identified by skill so they remain useful without borrowing question numbering.

Part I chapter | Verified title | Your study status

1 | A Square and A Cube | Not studied / practising / revisit later

2 | Power Play | Not studied / practising / revisit later

3 | A Story of Numbers | Not studied / practising / revisit later

4 | Quadrilaterals | Not studied / practising / revisit later

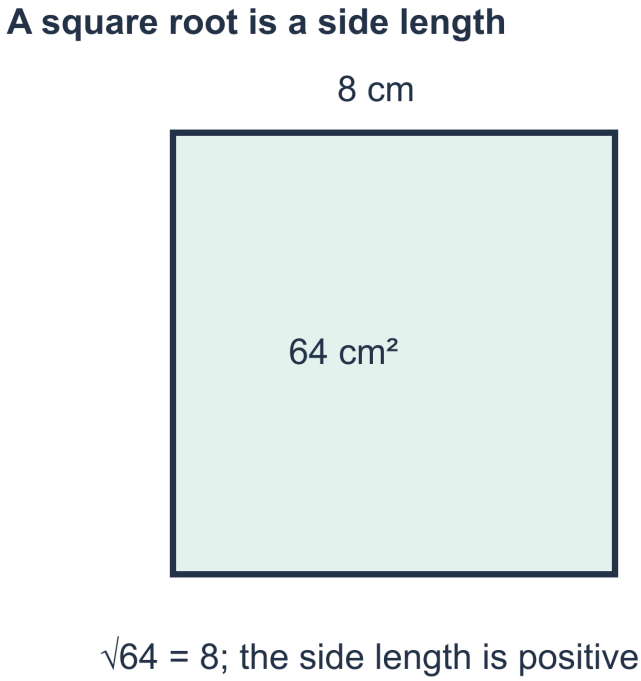
5 | Number Play | Not studied / practising / revisit later

6 | We Distribute, Yet Things Multiply | Not studied / practising / revisit later

7 | Proportional Reasoning | Not studied / practising / revisit later

2. Link squares, cubes and powers to quantities

The opening titles A Square and A Cube and Power Play suggest a useful connection between repeated multiplication and geometric models. A square of side eight has area sixty-four; a cube of side three has volume twenty-seven. The units change with dimension.



A square with side eight centimetres and area sixty-four square centimetres illustrates the positive square root.

Distinguish the principal square root from solving an equation. $\sqrt{64}$ names the nonnegative root eight. The equation $x^2 = 64$ has solutions eight and negative eight because both square to sixty-four. A physical side length cannot be negative.

For equal bases, multiplying powers combines repeated factors: $2^3 \times 2^2$ contains five factors of two, so it equals 2^5. The rule is not "multiply all exponents", and it does not directly turn $2^3 \times 3^2$ into a single power by adding the exponents.

3. Test a number claim with a reason

A Story of Numbers and Number Play are separate titles in the verified part. For original supporting practice, investigate divisibility, factors and patterns by explaining why a claim works rather than collecting isolated answers.

For example, a number ending in an even digit is divisible by two because its tens part is already a multiple of ten, and therefore a multiple of two. The final digit determines whether another unpaired unit remains.

One successful example does not prove a statement about every number. The claim "every odd number is prime" fails at nine because 9 = 3 × 3. A counterexample is enough to refute an all-number claim, whereas a general proof needs a reason that covers every allowed case.

4. Use the conditions of the shape

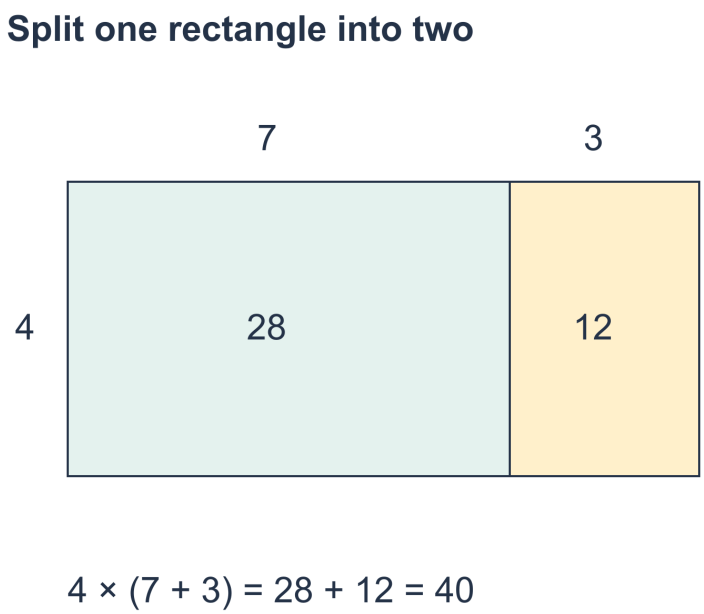
Quadrilaterals is the fourth title in Part I. A quadrilateral has four sides and its interior angles total 360° in ordinary plane geometry. If three angles are 80°, 95° and 105°, the remaining angle is 80°.

Special shapes supply additional conditions. In a parallelogram, opposite sides are parallel and opposite angles are equal. Adjacent angles add to 180°. A diagram that merely looks like a parallelogram is not enough; the description or markings must establish the condition.

Area requires appropriate measurements. A parallelogram with base 10 cm and perpendicular height 6 cm has area 60 cm^2. Replacing the perpendicular height with a sloping side can give the wrong area even if the multiplication itself is correct.

5. See distribution as partitioning

We Distribute, Yet Things Multiply is the sixth title in the verified map. A rectangle four units tall and ten units wide can be split into widths seven and three. Its area is both 4 × 10 and 4 × 7 + 4 × 3.



A four-by-ten rectangle splits into four-by-seven and four-by-three rectangles with areas twenty-eight and twelve.

This explains 4(7 + 3) = 28 + 12. Every part inside the brackets receives the multiplier. The tempting expression 4 × 7 + 3 gives thirty-one because it multiplies only one part; it does not represent the full rectangle.

The same structure works with a letter: 4(x + 3) = 4 x + 12. The letter does not change the distributive rule. Reverse the reasoning to factorise 4 x + 12 as 4(x + 3), and check by expanding back.

6. Decide the relationship before calculating

Proportional Reasoning is the final title in the verified Part I contents. In original practice, identify the quantities and test whether their ratio is constant before using a direct-proportion method. Five notebooks costing ₹75 at one unit price imply ₹15 each.

At that price, eight notebooks cost ₹120. But a service charging ₹20 once plus ₹15 per item is not directly proportional: doubling the number of items does not double the fixed fee. A table of values can reveal the difference.

When reviewing a chapter, keep one reason and one counterexample beside the rule. Record the book title, an independent task, the misconception found and the next action. The mixed worksheet is a sample for this purpose, not a comprehensive Part I or Part II assessment.

5 worked examples with reasoning

1. A square has area 81 cm^2. Find its side length.

1. The positive square root of eighty-one is nine.

2. The side is 9 cm.

3. Do not give −9 cm as a physical length.

2. Simplify $3^2 \times 3^3$.

1. Both powers have base three.

2. Combine five factors: $3^5 = 243$.

3. Adding the exponents is justified by repeated multiplication.

3. A quadrilateral has angles 70°, 110° and 95°. Find the fourth.

1. The angle sum is 360°.

2. Fourth angle = 360 − 70 − 110 − 95 = 85°.

3. Check that all four total three hundred sixty.

4. Expand 5(x + 4).

1. Multiply each term inside the brackets by five.

2. The result is 5 x + 20.

3. At x = 2 both original and expanded forms give thirty.

5. Three identical notebooks cost ₹54. Find the cost of seven at the same unit price.

1. One notebook costs 54 ÷ 3 = ₹18.

2. Seven cost 7 × 18 = ₹126.

3. This assumes no fixed fee or quantity discount.

Use the ideas without looking at the notes

Match the official part first. Then use one chapter row with a dated independent example, a question to revisit and a next action.

Common questions

Is this the entire Class 8 syllabus?

No. The verified map is limited to Grade 8 Ganita Prakash Part I.

Does √64 equal both eight and negative eight?

No. √64 is eight. Both signs solve the different statement $x^2 = 64$.

Are the examples taken from NCERT exercises?

No. They are original BananaLearn examples supporting selected concepts.

What if the school book uses different chapter names?

Match the book, part, language and publication details before using the numbered map.

What should a parent record after practice?

The specific misconception, one successful independent explanation and the next review task.

Connect your learning

- Extend area models to algebraic identities
- Compare proportional relationships
- Revise selected formulas with their conditions

Ask about guided Maths learning if your child needs help explaining these ideas.

About this guide

Original explanations, examples, diagrams and practice by BananaLearn. The grade label indicates the intended learning level; this is not an official textbook extract or exam paper.

- NCERT Ganita Prakash Grade 8 Part I - contents and publication details, reprint 2026-27

NCERT Class 8 maths: Ganita Prakash Part I chapter guide

Practice worksheet - Maths · Class 8

Name: _____ Date: _____

Show your working. Answers and explanations follow on a separate page.

Try each task before opening its answer. Give an example or reason, not only a label.

Write an answer and your reason before opening the explanation. Check the reasoning as well as the final answer.

1. Find √49.

2. Solve $x^2 = 49$ over the real numbers.

3. Find the volume of a cube of side 4 cm.

4. Simplify $2^4 \times 2^3$.

5. Is 246 divisible by 2? Explain.

6. Give a counterexample to "every odd number is prime".

7. A quadrilateral has three right angles. Find the fourth angle.

8. One angle of a parallelogram is 65°. Find an adjacent angle.

Practice continued

9. A parallelogram has base 8 cm and perpendicular height 5 cm. Find its area.

10. Expand 3(x + 6).

11. Factorise 5 x + 15 using the common factor.

12. Four identical pens cost ₹28. Find the cost of nine at the same unit price.

13. A delivery costs ₹10 plus ₹4 per item. Is the total directly proportional to item count?

14. Can this verified Part I list confirm a Part II chapter number?

Answers and explanations

Answer key - Maths · Class 8

NCERT Class 8 maths: Ganita Prakash Part I chapter guide

1. 7.

The square-root symbol denotes the nonnegative root.

2. $x = 7$ or $x = -7$.

Both values square to forty-nine.

3. 64 cm^3.

4 × 4 × 4.

4. $2^7 = 128$.

Add exponents for the equal base.

5. Yes.

Its units digit is even.

6. 9, for example.

It is odd but equals 3 × 3.

7. 90°.

360 − 270.

8. 115°.

Adjacent angles are supplementary.

9. 40 cm^2.

Base times perpendicular height.

10. 3 x + 18.

Distribute three to both terms.

11. 5(x + 3).

Expand to check.

12. ₹63.

Each pen costs seven rupees.

13. No.

The fixed charge prevents a constant cost-per-item ratio.

14. No.

Use Part II's own official contents.