

ALPHALEARN STUDYLAB

STD 7 MATHEMATICS

COMPLETE STUDY GUIDE

Ganita Prakash — Concept Notes, Tips & Fully Solved Questions

Every Question Answered • Part I & Part II

Based on CBSE / NCERT Curriculum

STD 7 MATHEMATICS — COMPLETE GUIDE

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PART I

Ganita Prakash — Complete Study Guide

PART I

CHAPTER 1

Large Numbers Around Us

Concept Notes • Study Tips • Fully Solved Q&A

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Chapter 1 (Part I): Large Numbers Around Us

Class 7 Mathematics (Ganita Prakash) — Complete Study Guide

CONCEPT NOTES

- Indian place value system groups digits as 3-2-2-2... from the right: ones-tens-hundreds, then thousands-ten thousands, then lakhs-ten lakhs, then crores-ten crores.
- 1 Lakh = 1,00,000 (5 zeroes). 1 Crore = 1,00,00,000 (7 zeroes). 1 Crore = 100 Lakhs = 10 Million.
- American (International) system groups in 3s: ones-tens-hundreds, thousands, millions, billions.
- Rounding rule: look at the digit to the right of the place you're rounding to — if it's 5 or more, round UP; if less than 5, round DOWN (keep the digit the same).
- To round to the nearest lakh, check the ten-thousands digit; to round to the nearest thousand, check the hundreds digit.
- When solving multiplication pattern questions (like 111×111), look for palindrome patterns and note how digit count changes with more repeated digits.

Quick Glossary

- Lakh — 1,00,000 (hundred thousand).
- Crore — 1,00,00,000 (ten million).
- Rounding — approximating a number to a given place value.

STUDY TIPS & EXAM TRICKS

- When rounding, always underline the digit AT the place you're rounding to, then look ONE digit to its right to decide up/down.
- Common mistake: confusing lakh/crore (Indian system) with thousand/million (International system) — always double-check which system a question specifies.
- For assertion-reason (A-R) questions, evaluate A and R completely separately before deciding if R actually EXPLAINS A — sometimes both are true but unrelated.
- For 'is this claim always true' questions, try to find ONE counter-example that breaks the rule — that's enough to disprove it.
- Word problems with money/population are just place-value and rounding questions in disguise — extract the numbers first, then apply the same rules.

Worksheet — Fully Solved

Section A — Objective Questions (MCQ)

Q1. Which of the following numbers is equal to One Lakh?

(a) 10,000 (b) 1,00,000 (c) 10,00,000 (d) 1,00,00,000

Answer: (b) 1,00,000. One lakh = 1 followed by 5 zeroes = 1,00,000.

Q2. The number 1,00,00,000 is read as:

(a) Ten lakhs (b) One crore (c) Ten crores (d) One arab

Answer: (b) One crore. 1,00,00,000 = 1 followed by 7 zeroes = one crore.

Q3. Ravi rounded off 3,87,456 to the nearest lakh and got 4,00,000. Priya rounded it to the nearest ten thousand and got 3,90,000. Who is correct?

(a) Only Ravi (b) Only Priya (c) Both are correct (d) Neither is correct

Answer: (c) Both are correct. Ravi: the ten-thousands digit is 8 (≥ 5), so the lakh digit rounds up $\rightarrow$ 4,00,000. Priya: the thousands digit is 7 (≥ 5), so the ten-thousands digit rounds up $\rightarrow$ 3,90,000. Both used the correct rounding rule for their respective place values.

Q4. In the Indian place value system, commas in the number 1,25,36,784 separate digits in which pattern (from right to left)?

(a) 3-3-3 (b) 3-2-2 (c) 2-2-3 (d) 3-2-2-2

Answer: (b) 3-2-2. The Indian system groups the first 3 digits from the right, then groups of 2 thereafter.

Q5. Assertion (A): 1 lakh is equal to 100 thousands. Reason (R): The smallest 6-digit number is 1,00,000.

(a) Both true, R explains A (b) Both true, R doesn't explain A (c) A true, R false (d) A false, R true

Answer: (b) Both A and R are true, but R is not the correct explanation of A. A is true (1 lakh = 1,00,000 = $100 \times 1,000$); R is also true (smallest 6-digit number = 1,00,000), but R only shows lakh has 6 digits — it doesn't directly explain WHY a lakh equals 100 thousands.

Section B — Very Short Answer

Q6. Write the number 25,06,008 in words (Indian system).

Answer: Twenty-five lakh six thousand and eight.

Q7. Fill in the blank: The nearest crore of 6,49,87,321 is _____.

Answer: 6,00,00,000 (Six crore). Working: the crore digit is 6; the next digit (4) is less than 5, so the crore digit stays the same $\rightarrow$ 6,00,00,000.

Q8. True or False (correct the false statement): 1 crore = 10 million.

Answer: TRUE. 1 crore = 1,00,00,000. 1 million = 10,00,000 (ten lakhs). So 1 crore = $10 \times 10,00,000 = 10$ million. ✓

Q9. The 'Thoughtful Thousands' calculator has only a +1000 button. How many times must it be pressed to show 85,000?

Answer: 85 times. $85,000 \div 1,000 = 85$ button presses.

Q10. A shopkeeper has ₹4,72,500. Round this amount to the nearest thousand.

Answer: ₹4,73,000. The digit in the hundreds place is 5, so the thousands digit rounds up:
 $4,72,000 + 1,000 = 4,73,000$.

Section C — Short Answer

Q11. Write the following numbers in the Indian place value system: (a) Forty-two lakh nine thousand three hundred and five (b) Seven crore fifty lakh two hundred and six

Answer: (a) 42,09,305. (b) 7,50,00,206.

Q12. The 'Handy Hundreds' (+100) calculator table: (i) 450 button presses – ? displayed; (ii) ? button presses – 73,500 displayed; (iii) 1,200 button presses – ? displayed.

Answer: (i) $450 \times 100 = 45,000$. (ii) $73,500 \div 100 = 735$ button presses. (iii) $1,200 \times 100 = 1,20,000$.

Q13. According to the 2011 Census, the population of City A was 43,56,789 and City B was 38,94,215. Find the total population of both cities. Round your answer to the nearest lakh.

Answer: Total population = $43,56,789 + 38,94,215 = 82,51,004$. Rounded to nearest lakh: the ten-thousands digit is 5, so it rounds up – 83,00,000.

Q14. Observe the pattern and complete the series: $11 \times 11 = 121$, $111 \times 111 = 12,321$, $1111 \times 1111 = ?$, $11111 \times 11111 = ?$ What pattern do you notice?

Answer: $1111 \times 1111 = 12,34,321$. $11111 \times 11111 = 1,23,454,321$. Pattern: the products form a palindrome (read the same forwards and backwards), with digits rising from 1 up to the number of 1s in the multiplier, then decreasing back to 1.

Q15. Reema says, 'If I multiply a 3-digit number by a 2-digit number, I will always get a 4-digit answer.' Is she correct? Justify with an example.

Answer: Reema is INCORRECT. Example: $999 \times 10 = 9,990$ (a 4-digit product, supporting her claim), but $999 \times 99 = 98,901$ (a 5-digit product!). So the product of a 3-digit and a 2-digit number can be either 4-digit or 5-digit — smallest possible: $100 \times 10 = 1,000$ (4 digits); largest possible: $999 \times 99 = 98,901$ (5 digits).

Section D — Higher Order Thinking Skills (HOTS)

Case Study — The Bird Migration Marvel: A bar-tailed godwit flew non-stop from Alaska to Australia — a distance of 13,560 km — in about 11 days. The Narcondam Hornbill, found only on a small Indian island, has a total wild population of roughly 400 birds.

Q16(a). Approximately how many kilometres did the godwit cover per day? Show your working.

Answer: Distance per day = $13,560 \div 11 \approx 1,232.7$ km, so approximately 1,233 km per day (rounded to the nearest km).

Q16(b). The total distance from the Earth to the Moon is 3,84,400 km. How many such godwit journeys (each 13,560 km) would together be roughly equal to one Earth-Moon distance?

Answer: Number of journeys = $3,84,400 \div 13,560 \approx 28.34$, so approximately 28 journeys (rounded to the nearest whole number).

Q16(c). The godwit covered 13,560 km in about 11 days. Write 13,560 in the American (International) number-naming system and state its place-value range.

Answer: 13,560 in the American system is written the same way: 13,560, read as 'Thirteen thousand five hundred and sixty'. It is a five-digit number falling in the ten-thousands range (10,000–99,999).

SAMPLE PREVIEW
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