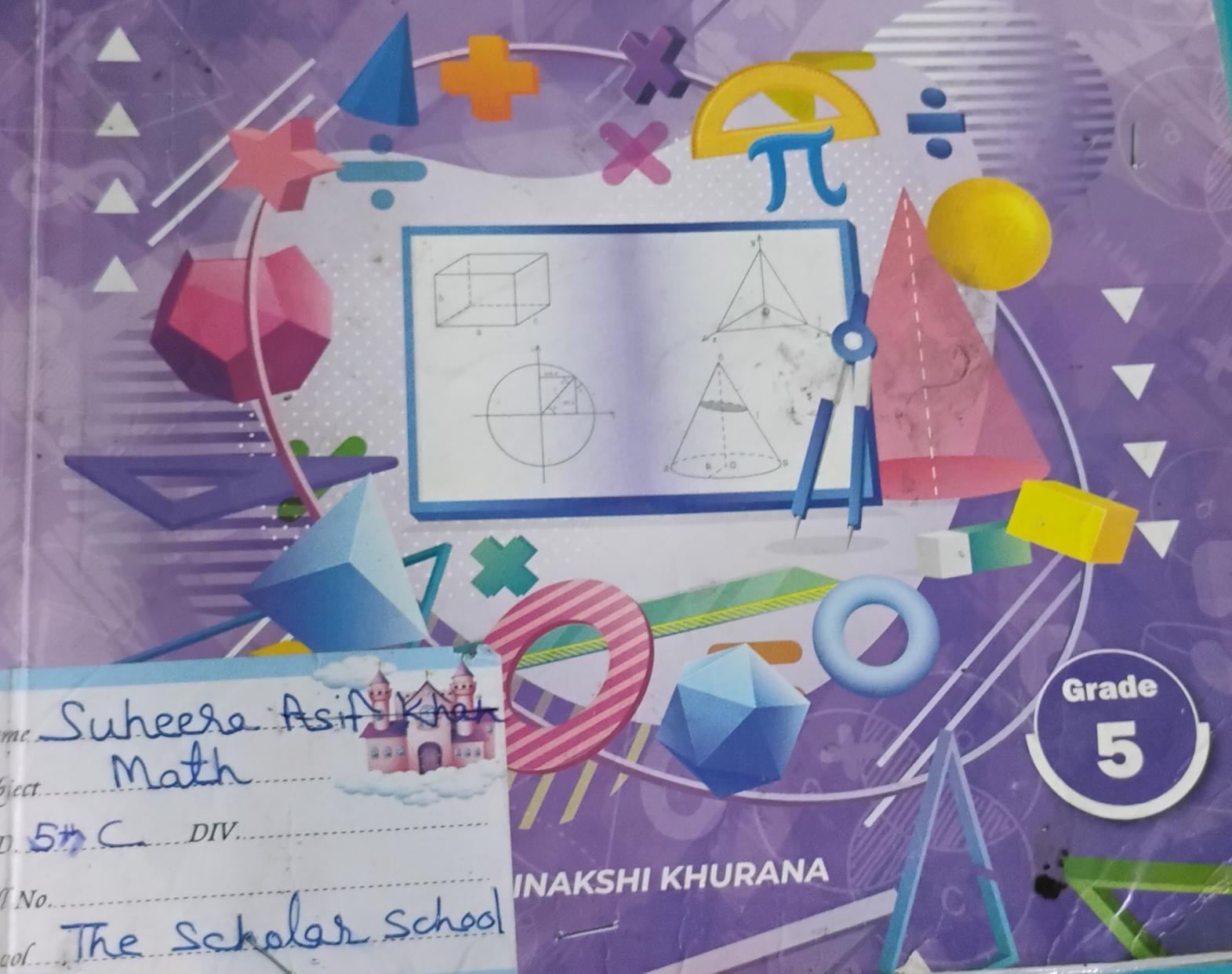


UPDATED EDITION

MATHS weaves



1 Large Numbers



Warm Up

We use large numbers when we talk about the areas of countries and the radius of different planets. Where else do you think you see large numbers in real life? Discuss in class.



Spark Up

Answer the following.

1. Write the smallest 5-digit number.
2. Write the smallest 6-digit number according to the Indian System of Numeration
3. Write the number names for the given numbers.
 - a. 86,305
 - b. 9,45,352
 - c. 142,984
 - d. 35,999
4. Write the predecessor and successor of the given numbers.

Predecessor

- a. 67,229
- b. 59,764
- c. 13,819
- d. 19,998

Number

67,230

59,765

13,820

19,999

Successor

67,231

59,766

13,821

20,000

5. Form the largest and the smallest 6-digit numbers using the digits 3, 7, 0, 6, 8 and 1 according to the International System of Numeration.

Thrill in Store

- 7- and 8-digit numbers
- Understanding 7- and 8-digit numbers in Indian and International numeral systems
- Predecessor and successor
- Comparing numbers
- Forming largest and smallest numbers
- Rounding off numbers

7- and 8-digit Numbers

Indian System of Numeration

Indian Numeral System									
Crores Period		Lakhs Period		Thousands Period			Ones Period		
		Ten Lakhs (TL)	Lakhs (L)	Ten Thousands (TTh)	Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)	
Crores (C)	Ten Lakhs (TL)	Lakhs (L)	Ten Thousands (TTh)	Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)		

In the Indian numeral system, the smallest 7-digit number (10,00,000) is read as **ten lakh** and the smallest 8-digit number (1,00,00,000) is known as **one crore**.

7-digit numbers begin with the Ten lakhs (TL) place in the place value chart, while 8-digit numbers begin with the Crores place. The lakhs period has two places—Ten Lakhs and Lakhs and the Crores period too has two places—Ten Crores and Crores.

Example 1: Write the number 62235763 in the Indian System of Numeration.

a. With commas b. In words

c. In expanded form

Crores	Lakhs	Thousands	Ones				
C	TL	L	TTh	Th	H	T	O
6	2	2	3	5	7	6	3

With commas: 6,22,35,763

In words: Six crores twenty-two lakh thirty-five thousand seven hundred sixty-three

Expanded form: $6,00,00,000 + 20,00,000 + 2,00,000 + 30,000 + 5,000 + 700 + 60 + 3$

Face Value and Place Value

We know that the face value of a digit in any number is the digit itself, while the place value of a digit depends on its place or position in a number.

Example 2: Write the face value and the place value of each digit in 7123985.

TL	L	TTh	Th	H	T	O
7	1	2	3	9	8	5
→ Periods						
→ 7-digit number						
→ 8-digit number						
Place value						Face value
→ 5 Ones = 5						5
→ 8 Tens = 80						8
→ 9 Hundreds = 900						9
→ 3 Thousands = 3000						3
→ 2 Ten Thousands = 20000						2
→ 1 Lakhs = 100000						1
→ 7 Ten Lakhs = 7000000						7

International System of Numeration

In the International system of numeration, the place value chart has Ones, Thousands and Millions periods. Each period has three places.

Periods	Millions	Thousands	Ones						
Places	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
Place Values	100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1

Example: Write the number 70326540 in the International place value system. Put commas and write it in words and expanded form.

Millions	Thousands	Ones					
TM	M	HTh	TTh	Th	H	T	O
7	0	3	2	6	5	4	0

With commas: 70,326,540

In words: Seventy million three hundred twenty-six thousand five hundred forty

Expanded form: $70,000,000 + 0 + 300,000 + 20,000 + 6,000 + 500 + 40 + 0$

Knowledge Time

- While writing number names, write hyphen (-) between double digits and do not write 'and'.
- Example:* 42,75,518: Forty-two lakh seventy-five thousand five hundred eighteen.
- The placement of commas help us identify whether the number is in the Indian system or International system of numeration.



Time to Check 1

- Write the number names for the following numerals.**
 - 22,13,350
 - 89,22,762
 - 5,00,22,613
 - 6,05,34,289
 - 6,321,350
 - 4,000,235
 - 89,058,136
 - 78,999,025
- Write the numerals for the following.**
 - Seven lakh four thousand nine hundred fifty-seven
 - Forty million ninety thousand one hundred twelve
 - Thirty-two million six hundred forty-two thousand five hundred eighty-six
 - Eight crore ninety-two lakh thirty-seven thousand eighteen
- Write the expanded form of the following numbers in the Indian and International systems of numeration.**
 - 54563343
 - 20845000
 - 91211535
 - 67324100
 - 80590200

Predecessor and Successor

A number one less than a given number is called its **predecessor**.

A number one more than a given number is called its **successor**.

Example: The successor of 38,27,129 is $38,27,129 + 1 = 38,27,130$ and its predecessor is $38,27,129 - 1 = 38,27,128$.

Comparing Numbers

Rules for comparing numbers:

- Unequal number of digits:** The number with more number of digits is greater than the number with fewer digits.
- Equal number of digits:** To compare numbers with equal digits, look at the digits at the extreme left and compare until the digits differ.

Example 1: Which number is greater: 3,54,627 or 3,45,66,719?

C	TL	L	TTh	Th	H	T	O
3,54,627			3	5	4	6	2
3,45,66,719	3	4	5	6	6	7	1

6-digits 8-digits

3,45,66,719 has more digits than 3,54,627.

So, 3,45,66,719 is greater than 3,54,627.

Example 2: Which number is greater: 3,62,27,901 or 3,90,37,283?

C	TL	L	TTh	Th	H	T	O
3,62,27,901	3	6	2	2	7	9	0
3,90,37,283	3	9	0	3	7	2	8

↑ ↑
3 C = 3 C 9 TL > 6 TL

So, 3,90,37,283 is greater than 3,62,27,901.

Ordering Numbers

Example 1: Arrange the following numbers in the Indian place value system in ascending order.

2,30,05,325 6,47,458 18,00,300 6,47,968

Crores		Lakhs	Thousands		Ones		
C	TL	L	TTh	Th	H	T	O
		6	4	7	4	5	8
		6	4	7	9	6	8
		1	8	0	0	3	0
2	3	0	0	5	3	2	5

6,47,458 < 6,47,968 < 18,00,300 < 2,30,05,325

Example 2: Arrange the following numbers in the Indian place value system in descending order.

7,57,42,523

7,75,42,523

9,65,888

17,65,888

Crores			Lakhs		Thousands		Ones		
C	TL	L	TTh	Th	H	T	O		
7	7	5	4	2	5	2	3		
7	5	7	4	2	5	2	3		
	1	7	6	5	8	8	8		
		9	6	5	8	8	8		

7,75,42,523 > 7,57,42,523 > 17,65,888 > 9,65,888

Forming Largest and Smallest Numbers

The smallest 7- or 8-digit number can be formed by arranging the given digits in increasing order. The largest 7- or 8-digit number can be formed by arranging the given digits in decreasing order.

Example 1: Form the smallest and the largest 8-digit numbers using the digits 2, 5, 7, 1, 4, 6, 9 and 8.

The largest 8-digit number is 9,87,65,421.

The smallest 8-digit number is 1,24,56,789.

Example 2: Form the smallest and largest 7-digit number using the digits 3, 0, 5, 7, 9, 8, 1.

The largest 7-digit number is 98,75,310.

The smallest 7-digit number is 10,35,789.



Time to Check 2

1. Compare the numbers and put <, >, or = sign.

a. 8,52,56,640

8,52,50,879

b. 4,26,16,530

4,26,16,530

c. 6,81,94,318

6,81,94,310

d. 3,14,87,127

3,14,78,127

2. Write the following numbers in ascending order.

- 4,19,33,340; 4,19,33,222; 4,19,33,333; 4,19,33,600
- 61,60,120; 61,60,002; 61,60,368; 61,60,458
- 4,98,460; 40,98,460; 2,40,98,460; 1,40,98,460
- 65,493,721; 65,893,721; 65,293,721; 65,993,721

3. Write the first five 8-digit numbers in the International system in descending order.

4. Write the successors and predecessors of the following numbers.

- 3,65,22,701
- 12,43,190
- 19,77,770
- 1,25,89,000

5. Write the largest and the smallest 8-digit numbers using only odd digits.

Rounding Off Numbers

Rounding Off to the Nearest 10

To round off a number to the nearest 10, look at the ones digit.

If the digit in the ones place is less than 5, then the digit in the ones place is replaced by 0 and the digit in the tens place remains the same.

And, if the digit in the ones place is 5 or greater than 5, then replace the digit in the ones place by 0 and increase the value of the digit in the tens place by 1.

Example: Round off 18,76,188 to the nearest tens.

In 18,76,188 the digit in the ones place is 8 which is greater than 5. So, we replace the digit in the ones place by 0 and increase the value of the digit in the tens place by 1.

Thus, 18,76,188 is rounded off to 18,76,190.

Rounding Off to the Nearest 100

To round off a number to the nearest 100, look at the digit in the tens place.

If the digit in the tens place is less than 5, then replace the digit in the tens and the ones place by 0 and the digit in the hundreds place remains the same.

And, if the digit in the tens place is 5 or greater than 5, then replace the tens and the ones digit by 0 and increase the value of the digit in the hundreds place by 1.

Example: Round off 17,41,767 to the nearest 100.

In number 17,41,767, the digit in the tens place is 6 which is greater than 5. So, we replace the digit in the ones and the tens place by 0 and increase the value of the digit in the hundreds place by 1.

Thus, 17,41,767 is rounded off to 17,41,800.

Rounding Off to the Nearest 1,000

To round off a number to the nearest 1,000, look at the digit in the hundreds place.

If the digit in the hundreds place is less than 5, then replace the digits in the hundreds, tens and the ones place by 0 and the digit in the thousands place remains the same.

And, if the digit in the hundreds place is 5 or greater than 5, then replace the digits in the hundreds, tens and the ones place by 0 and increase the value of the digit in the thousands place by 1.

Examples:

- 7,873 is rounded off to 8,000 since the digit in the hundreds place is 8.
- 23,739 is rounded off to 24,000 since the digit in the hundreds place is 7.



Time to Check 3

1. Round off the following numbers to the nearest 10.

- a. 2,175 b. 4,821 c. 5,37,055 d. 9,011
e. 7,485 f. 6,650 g. 8,99,995 h. 42,438

2. Round off the following numbers to the nearest 100.

- a. 28,956 b. 45,786 c. 157 d. 8,543
e. 24,503 f. 67,945 g. 4,675 h. 1,266

3. Round off the numbers to the nearest 1000.

- a. 3,940 b. 4,960 c. 55,729 d. 85,33,810
e. 7,338 f. 5,055 g. 72,13,947 h. 68,245

Roman Numerals

Recall that the Roman numeral system is made up of seven letters of the English alphabet. These letters and their corresponding Hindu-Arabic numerals are given below.

Roman Numeral	I	V	X	L	C	D	M
Hindu-Arabic Numeral	1	5	10	50	100	500	1000

There is no symbol for 0 in the Roman numeral system.
The Roman numeral system does not follow a place value system.

Rule 1: Repetition of letters denotes addition. Letters (I, X, C, M) can be repeated up to 3 times, unlike V, L and D, which are never repeated.
 $III = 1 + 1 + 1 = 3$

$$XXX = 10 + 10 + 10 = 30$$

$$CCC = 100 + 100 + 100 = 300$$

$$MMM = 1,000 + 1,000 + 1,000 = 3,000$$

Rule 2: One or more letters placed after a letter of a greater value implies addition.

$$XI = 10 + 1 = 11$$

$$CLX = 100 + 50 + 10 = 160$$

$$MC = 1,000 + 100 = 1,100$$

Rule 3: A letter placed before the letter of a greater value implies subtraction.

$$IX = 10 - 1 = 9 \quad XC = 100 - 10 = 90 \quad CM = 1,000 - 100 = 900$$

Rule 4: When a smaller number is placed between two numbers of greater value, it is subtracted from the number placed after it.

$$XIX = 19 \quad XXIV = 24 \quad LIX = 59 \quad CCXXIX = 229$$

Rules for subtraction:

- I can only be subtracted from V and X.
- X can only be subtracted from L and C.
- C can only be subtracted from D and M.
- V, L and M are never subtracted.

Rule 5: The value of some Roman numerals can be determined by writing in expanded form.

$$2,300 = 1,000 + 1,000 + 100 + 100 + 100$$

↓ ↓ ↓ ↓ ↓
M M C C C

$$2,300 = \text{MMCCC}$$



Time to Check 4

1. What numbers do these Roman numerals stand for?
a. MDCCCLXV b. MCMXLVI c. MCDXCVII d. MMCCCXVIII
e. CCCXIX f. CMXXX g. MDCCXXV h. MMDCCXXVIII
2. Write the Roman numerals for each of the following.
a. 345 b. 692 c. 879 d. 1245
e. 1092 f. 2320 g. 3560 h. 2297
3. Write the Roman numerals for each of the following.
a. The year of India's independence
b. The year when man first set foot on the moon
c. Your father's birth year
d. The year when the Indian Constitution came into force
4. Compare the following. Put <, > or = signs.
a. XL b. XC c. CXXX d. XCIII



Put On Your Thinking Caps

A number when rounded off to the nearest thousand gives 18,000. When rounded off to the nearest hundred, it gives 17,500. When it is rounded off to the nearest 10, it gives 17,550. What could be the possible numbers?

Puzzle Time

Use these number cards.

3	4	7	0	8	6
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1. Make 3 pairs of 4-digit numbers that have a difference of 100.
2. Make 3 pairs of 4-digit numbers that have a difference of 1000.

Practise Platform

1. Choose the correct answer.
 - a. Commas are inserted in a number after each
i. digit ii. place iii. period iv. group
 - b. The numeral for ninety crore nine thousand is
i. 9,09,000 ii. 9,00,09,000
iii. 90,00,09,000 iv. 9,00,90,000
 - c. The sum of the greatest 6-digit number and the greatest 7-digit number is
i. 10,99,998 ii. 1,09,99,998
iii. 10,09,998 iv. 1,00,99,998
 - d. The numeral 4,39,65,817 is written in the International number system as
i. 43,965,817 ii. 4,39,65,817
iii. 4,39,65,817 iv. 439,658,17

Rule 5: The value of some Roman numerals can be determined by writing in expanded form.

$$2,300 = 1,000 + 1,000 + 100 + 100 + 100$$
$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$
$$M \quad M \quad C \quad C \quad C$$
$$2,300 = MMCCC$$



Time to Check 4

1. What numbers do these Roman numerals stand for?

- a. MDCCLXV b. MCMXLVI c. MCDXCIV d. MMCCCVIII
- e. CCCXIX f. CMXXX g. MDCCXXV h. MMDCCXXVII

2. Write the Roman numerals for each of the following.

- a. 345 b. 692 c. 879 d. 1245
- e. 1092 f. 2320 g. 3560 h. 2297

3. Write the Roman numerals for each of the following.

- a. The year of India's independence
- b. The year when man first set foot on the moon
- c. Your father's birth year
- d. The year when the Indian Constitution came into force

4. Compare the following. Put <, > or = signs.

- a. XL LII
- b. XC LXXIX
- c. CXXX CCXIX
- d. XCIII XCIII



Put On Your Thinking Caps

A number when rounded off to the nearest thousand gives 18,000. When rounded off to the nearest hundred, it gives 17,500. When it is rounded off to the nearest 10, it gives 17,550. What could be the possible numbers?

Puzzle Time

Use these number cards.

347086

1. Make 3 pairs of 4-digit numbers that have a difference of 100.
2. Make 3 pairs of 4-digit numbers that have a difference of 1000.

Practise Platform

1. Choose the correct answer.

- a. Commas are inserted in a number after each
 - i. digit
 - ii. place
 - iii. period
 - iv. group
- b. The numeral for ninety crore nine thousand is
 - i. 9,09,000
 - ii. 9,00,09,000
 - iii. 90,00,09,000
 - iv. 9,00,90,000
- c. The sum of the greatest 6-digit number and the greatest 7-digit number is
 - i. 10,99,998
 - ii. 1,09,99,998
 - iii. 10,09,998
 - iv. 1,00,99,998
- d. The numeral 4,39,65,817 is written in the International number system as
 - i. 43,965,817
 - ii. 4,39,65,817
 - iii. 4,39,65,817
 - iv. 439,658,17

Rule 5: The value of some Roman numerals can be determined by writing in expanded form.

$$2,300 = 1,000 + 1,000 + 100 + 100 + 100$$

↓ ↓ ↓ ↓ ↓
M M C C C

$$2,300 = \text{MMCCC}$$



Time to Check 4

1. What numbers do these Roman numerals stand for?

- a. MDCCCLXV
- b. MCMXLVI
- c. MCDXCIV
- d. MMCCCXVIII
- e. CCCXIX
- f. CMXXX
- g. MDCCXXV
- h. MMDCCXXVIII

2. Write the Roman numerals for each of the following.

- a. 345
- b. 692
- c. 879
- d. 1245
- e. 1092
- f. 2320
- g. 3560
- h. 2297

3. Write the Roman numerals for each of the following.

- a. The year of India's independence
- b. The year when man first set foot on the moon
- c. Your father's birth year
- d. The year when the Indian Constitution came into force

4. Compare the following. Put <, > or = signs.

- a. XL LII
- b. XC LXXIX
- c. CXXX CCXIX
- d. XCIII XCIII



Put On Your Thinking Caps

A number when rounded off to the nearest thousand gives 18,000. When rounded off to the nearest hundred, it gives 17,500. When it is rounded off to the nearest 10, it gives 17,550. What could be the possible numbers?

Puzzle Time

Use these number cards.

3 4 7 0 8 6

1. Make 3 pairs of 4-digit numbers that have a difference of 100.
2. Make 3 pairs of 4-digit numbers that have a difference of 1000.

Practise Platform

1. Choose the correct answer.

- a. Commas are inserted in a number after each
 - i. digit
 - ii. place
 - iii. period
 - iv. group
- b. The numeral for ninety crore nine thousand is
 - i. 9,09,000
 - ii. 9,00,09,000
 - iii. 90,00,09,000
 - iv. 9,00,90,000
- c. The sum of the greatest 6-digit number and the greatest 7-digit number is
 - i. 10,99,998
 - ii. 1,09,99,998
 - iii. 10,09,998
 - iv. 1,00,99,998
- d. The numeral 4,39,65,817 is written in the International number system as
 - i. 43,965,817
 - ii. 4,39,65,817
 - iii. 4,39,65,817
 - iv. 439,658,17

2. Fill in the boxes.

- a. The expanded form of 700456988 in International system of numeration is $700,000,000 + 40,000 + 5,000 + 6,00 + 900$
- b. Seven lakh eight hundred written in numeral is 7,800
- c. The predecessor of the largest 8-digit number is 999,999,999
- d. The greatest and the smallest 8-digit numbers formed by using 3, 0, 5, 6, 9, 1, 7, and 8 are 98765310 and 10235678, respectively.
- e. 4 crores = 40 million

3. Rewrite the numbers by rounding off as directed.

- a. The cost of a smartphone is ₹56,785. (Round off to the nearest hundreds) 56,800
- b. The population of a state in India is 9,68,43,980. (Round off to the nearest thousands) 9,68,44,000
- c. The number of white cars in a city is 25,80,540. (Round off to the nearest tens) 25,80,540
- d. The cost of racing car is ₹1,65,83,700 (Round off to the nearest thousands) 1,66,00,000

4. Write the number names of the following according to the International and Indian systems of numeration.

- a. 23540789 b. 45720256 c. 16583700 d. 52965432

5. Complete the following.

- a. 7 million = 70 lakhs (Put > or < or =) *Muzum*
- b. 1 million = 10 lakhs
- c. The place value of 7 in 4,26,67,425 is 7,00
- d. The greatest 8-digit number using each digit twice 6,2,8,0 is 9999,9999
- e. The name of the smallest 8-digit number in the international system of numeration is 9999,9999

6. Fill in the boxes with suitable Roman numbers.

- a. XXXIII + = LX
- b. LXX - = LIX
- c. CXX - LVII =
- d. CXV + CXXIX =
- e. Sum of XXXVII and XV is
- f. Difference of LXV and IX is

Enrichment Corner



Lab Activity

Aim: To relate 7-digit and 8-digit numbers to everyday life

Materials: Newspaper, pencil, a sheet of chart paper, a pair of scissors, glue

Steps:

1. Look through the newspaper and underline 7-digit and 8-digit numbers.
2. Make a list of these numbers under various headings. For example, numbers related to budget figures, population, etc.
3. Cut out pictures (if any) related to the numbers chosen by you.
4. Make a collage of pictures of the 7-digit numbers on one side of the chart paper, and 8-digit numbers on the other side.
5. Discuss in the class how the 7-digit and 8-digit numbers are useful in our lives.

Project

Find the number of students in each class of your school. Put them in the place value chart following the Indian system. Add up the numbers for each class. Find out the number of students in a neighbouring school. Represent the total of each school, first using the Indian place value system and then the Roman numerals.

Wild Animal Population of Kerala, India

(As per Census 2011)



Spotted deer
11,398

SAVE ANIMALS,
SAVE THE PLANET



Elephant
7,490



Wild boar
48,034



Sambar deer
32,148

BE KIND TO
ANIMALS



Gaur
17,860

Source: <https://forest.kerala.in/index.php/about-us/wild-wildlife-enumen>

1. Round off the population of each animal to the nearest ten thousand.
2. Which animal is least in number?
3. Find the approximate number of Nilgiri langurs in Kerala. Round them off to the nearest thousands.
4. What measures are being taken to preserve the population of the wildlife in different parts of the country? Find out and discuss in class.

2 Addition and Subtraction of Large Numbers



Warm Up

The growth rate of the population keeps changing. We can find it by subtracting the death rate from the birth rate. Find the growth rate of your city. How does it compare with the growth rate of the country? Find out.

Thrill in Store

- Addition
- Addition facts
- Estimating the sum
- Subtraction
- Subtraction facts
- Estimating the difference
- Word problems on addition and subtraction



Spark Up

1. Add the following numbers.
 - a. 2,83,323 and 1,38,282
 - b. 5,43,567 and 1,83,939
 - c. 9,88,345 and 3,87,196
 - d. 4,32,562 and 1,73,456
2. Subtract the following numbers.
 - a. 1,38,838 from 4,78,791
 - b. 3,83,829 from 3,99,379
 - c. 58,695 from 7,00,039
 - d. 1,90,895 from 3,99,873
3. A company produced 5,24,665 mobile phones in 2020, 3,90,895 mobile phones in 2021 and 1,05,725 mobile phones in 2022.
 - a. Find the total number of mobile phones produced in three years?
 - b. If 3,87,873 mobile phones were sold in these 3 years, how many mobile phones were not sold?
 - c. Find the total number of mobile phones produced by the company in 2021 and 2022.
 - d. Find the difference between the mobile phones produced by the company in 2020 and 2022.

Addition Facts

- Adding 0 to a number gives the number itself. Thus, 0 is called the **additive identity**.
Example: $42,635 + 0 = 42,635$

- Any number except 1 can be written as the sum of two or more numbers in many ways.

Example: $0 + 4 = 4$
 $1 + 3 = 4$
 $2 + 2 = 4$
 $3 + 1 = 4$

Addition of Large Numbers

Example 1: Add 11,43,324 and 11,12,301.

TL	L	TTh	Th	H	T	O
1	1	4	3	3	2	4
+ 1	1	1	2	3	0	1
2	2	5	5	6	2	5

$$11,43,324 + 11,12,301 = 22,55,625$$

Example 2: Add 13,45,608 and 13,06,572.

TL	L	TTh	① Th	① H	T	O
1	3	4	5	6	0	8
+ 1	3	0	6	5	7	2
2	6	5	2	1	8	0

$$13,45,608 + 13,06,572 = 26,52,180$$



Knowledge Time

Follow this order for addition of numbers.

Ones → tens → hundreds → thousands → ten thousands → lakh → ten lakh. Regroup wherever necessary.



Time to Check 1

1. Fill in the boxes.

a. $56,749 + 0 =$

b. $8,88,990 +$ = 8,88,990

c. $7,56,43,931 +$ = + 7,56,43,931

2. Arrange the following numbers in columns and add.

- a. $23,35,342 + 22,34,632$
b. $58,77,324 + 21,53,016$

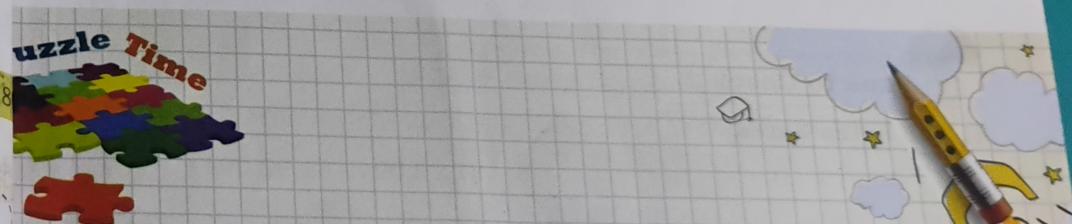
- c. $51,76,481 + 23,84,326$
d. $32,85,193 + 17,64,329$

3. Solve the following.

- a. 6,500 more than 4,69,320
b. 9 tens more than 4,27,608
c. 50,00,000 more than 48,72,945
d. 8,00,000 more than 48,64,396

4. Find the sum of the following numbers.

- a. 3,42,75,621; 8,39,21,475; 5,37,21,542
b. 2,44,10,325; 3,14,57,512; 4,41,23,345
c. 2,54,134; 66,24,612; 5,21,31,352
d. 28,94,352; 9,56,245; 5,69,83,224
e. 2,30,042; 1,00,87,302; 11,30,042



In the addition problem below, the letters AB represent a two-digit number. If letter B is not a zero (0), can you tell which numbers represent A and B?

$$\begin{array}{r} AB \\ AB \\ + AB \\ \hline 19B \end{array}$$

HINT
There is only one number besides zero that B could be. What is it? Why?

Subtraction of Large Numbers

Subtraction Facts

- When we subtract zero from a number, we get the number itself.
Example: $16,25,123 - 0 = 16,25,123$
- When a number is subtracted from itself, we get zero.
Example: $16,25,123 - 16,25,123 = 0$
- When 1 is subtracted from a number, we get its predecessor.
Example: $35,56,875 - 1 = 35,56,874$
- We cannot subtract a bigger number from a smaller number.

We can check subtraction using addition.

Example: Subtract 52,68,529 and 21,69,368. Also check your solution.

TL	L	TTh	Th	H	T	O
5	2	15	8	5	2	9
2	1	6	9	3	6	8
3	0	9	9	1	6	1

$$52,68,529 - 21,69,368 = 30,99,161$$



Time to Check 2

1. Fill in the boxes.

a. $33,219 - 0 =$

b. $81,92,094 - 81,92,094 =$

c. $8,87,190 - 1 =$

d. $77,615 -$ $= 77,615$

2. Arrange the following numbers in columns and subtract.

a. $84,26,292 - 63,13,171$

b. $38,76,683 - 12,17,422$

c. $7,23,498 - 5,29,955$

d. $14,82,190 - 1,96,978$

3. Subtract and write the answer in words.

a. $87,86,321 - 73,26,125$

b. $88,34,568 - 64,37,898$

c. $95,75,249 - 5954,827$

d. $7,63,45,620 - 6,15,43,289$

e. $8,98,99,987 - 2,32,44,325$

f. $2,56,98,218 - 98,75,390$

4. The difference of two numbers is 1,10,23,145. If one of the numbers is 7,72,62,987. Find the other number.

5. What should be added to 7,35,47,459 to get the greatest 8-digit number?

Word Problems on Addition and Subtraction

Example: The population of a town is 16,48,768. If 23,523 people leave the town, what will be the new population of the town?

Population of the town

Number of people who left the town

New population of the town

TL	L	TTh	Th	H	T	O
1	6	4	8	7	6	8
		2	3	5	2	3
1	6	2	5	2	4	5

Thus, the new population of the town is 16,25,245.



Time to Check 3

Solve the following.

- The population of Town A is 4,12,31,527 and that of Town B is 5,27,84,233. Find the total population of the two towns.
- People of a country last year planted 52,32,000 new trees. This year they planted 50,12,320 new trees. What is the total number of trees planted in that country?
- Kavita earned ₹25,28,000 in two years. Her sister Seema earned ₹2,99,000 less than her. How much did Seema earn?
- A car manufacturing company produced 54,29,756 cars in 2020 and 67,21,058 cars in 2021. How many more cars were produced in 2021 than in 2020?



Put On Your Thinking Caps

1. Fill in the missing digits.

$$\begin{array}{r}
 7 \ 6 \ 3 \ 2 \ 9 \ 8 \ \square \ \square \\
 + 1 \ \square \ 1 \ \square \ 2 \ \square \ 4 \ 8 \\
 \hline
 \square \ 8 \ \square \ 7 \ \square \ 9 \ 7 \ 2
 \end{array}$$

$$\begin{array}{r}
 5 \ 4 \ \square \ 2 \ 9 \ 0 \ 6 \\
 + \square \ \square \ 4 \ \square \ \square \ 8 \ 3 \\
 \hline
 8 \ 1 \ 5 \ 1 \ 5 \ \square \ \square
 \end{array}$$

- Can you place the number 0, 1, 5, and 6 in the boxes shown alongside? Each number can be used only once.

$$\begin{array}{r}
 7 \ 6 \ 3 \\
 \square \ \square \ \square \\
 + \ 8 \ \square \\
 \hline
 9 \ 9 \ 9
 \end{array}$$

3. In a group of 28 school students, 7 take Sanskrit, 10 take English, and 4 take both languages. The students taking both Sanskrit and English are not counted with the 7 taking Sanskrit or the 10 taking English. How many students are not taking either Sanskrit or English?

Practise Platform

1. Find the sum.

a. $52,15,487 + 25,42,806$

b. $72,17,667 + 35,64,708$

c. $36,46,348 + 1,94,47,635 + 76,43,570$

d. $8,10,663 + 73,01,006$

e. $36,46,348 + 1,94,47,635 + 76,43,570$

f. $3,96,475 + 2,23,979 + 45,670 + 1,32,970$

g. $57,25,670 + 45,25,925$

b. $6,00,743 + 83,51,246$

d. $8,10,663 + 73,01,006$

h. $40,98,938 + 2,70,790$

2. Find the difference.

a. $2,83,21,564 - 2,10,00,008$

c. $9,87,54,325 - 8,35,75,571$

e. $70,30,049 - 15,91,125$

b. $3,78,20,091 - 11,46,563$

d. $9,89,88,987 - 2,32,34,325$

f. $8,82,275 - 5,67,035$

3. Solve.

a. A fruit seller sold 12,31,700 oranges, 10,12,580 mangoes and 8,54,030 apples in a year. How many fruits did he sell?

b. A company sold 3,67,878 ice creams of type A; 4,42,12,652 ice creams of type B and 3,00,00,125 ice creams of type C. How many ice creams did the company sell in all?

c. The sum of two numbers is 45,26,261. If one number is 32,62,413, find the other number.

d. Anil wants to buy a flat for ₹70,25,000. He has only ₹20,35,000 with him. How much more money does he need?

e. Which number should be added to 32,67,899 to make it 54,62,188?

f. Make the greatest and the smallest 8-digit number using the digits 5,7,0,8,4,9,2,1. Find the sum and difference of the two numbers.

Enrichment Corner



Lab Activity

Aim: To understand the creation and operations of large digits

Materials: Number cards, various sets of questions (follow the sample questions)

Steps:

- Divide the class into groups of four. Ask each group to make number cards from 0 to 9.
- Each group should make 7- and 8-digit numbers using the cards.
- Give a box with chits of different sets of questions to each group.
- The group which solves the given set of questions within the stipulated time is the winner.

Sample questions

- Find the sum of the numbers.
- Create the greatest 7-digit number and the smallest 6-digit number using the given set of digits.
- Find the difference of the two numbers formed above.

Project

Visit a nearby bus stand and count the number of passengers boarding any bus on a particular Saturday. Go to the same place and count the number of passengers boarding the bus of the same route on the following day. Find out on which day there are more passengers travelling. By how many times is it more than the other day?

UPDATED EDITION

MATHS weaves

