

1

CHAPTER

Large Numbers

Warm-up Exercise

- The smallest 5-digit number = 10000
Predecessor of 10000 = $10000 - 1 = 9999$
Successor of 10000 + 1 = 10001
 - The greatest 5-digit number = 99999
Predecessor of 99999 - 1 = 99998
Successor of 99999 + 1 = 100000
 - The smallest 6-digit number = 100000
Predecessor of 100000 - 1 = 99999
Successor of 100000 + 1 = 100001
- 744460
Indian System: 7,44,460
Number Name: Seven lakh forty-four thousand four hundred sixty
 - 500001
Indian System: 5,00,001
Number Name: Five lakh one

Practice (Page 12)

- Place value of the underlined digit 7 in the number $55\underline{7}063291 = 7000000$

Checkpoint 1A

- 140011000
Predecessor: $140011000 - 1 = 140010999$
Successor: $140011000 + 1 = 140011001$
- | TC | C | TL | L | TTh | Th | H | T | O |
|----|---|----|----|-----|----|---|---|---|
| | | 2 | 7, | 4 | 5, | 9 | 5 | 0 |

 Number Name: Twenty-seven lakh forty-five thousand nine hundred fifty

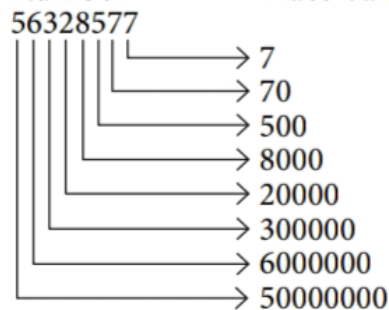
- | TC | C | TL | L | TTh | Th | H | T | O |
|----|----|----|----|-----|----|---|---|---|
| | 1, | 4 | 8, | 4 | 9, | 5 | 0 | 0 |

Number Name: One crore forty-eight lakh forty-nine thousand five hundred

- | TC | C | TL | L | TTh | Th | H | T | O |
|----|----|----|----|-----|----|---|---|---|
| 6 | 5, | 1 | 2, | 0 | 0, | 5 | 3 | 2 |

Number Name: Sixty-five crore twelve lakh five hundred thirty-two

3. Number Place Value



- 10,00,000**; 10,00,001; 10,00,002; 10,00,003; 10,00,004; 10,00,005; **10,00,006**
- Skipping by hundreds the next two numbers after 43,65,777 are 43,65,877; 43,65,977
 - Skipping by thousands the next two numbers after 43,65,777 are 43,66,777; 43,67,777
 - Skipping by lakhs the next two numbers after 43,65,777 are 44,65,777; 45,65,777
- Expanded form of $7,55,81,703 = 70000000 + 5000000 + 500000 + 80000 + 1000 + 700 + 3$
 - Expanded form of $9,82,15,210 = 90000000 + 8000000 + 200000 + 10000 + 5000 + 200 + 10$

Practice (Page 17)

- 1 crore = 1,00,00,000 = 10,000,000 = 10 millions
- 1000 crores = $1000 \times 10000000 = 10,000,000,000 = 10 \text{ billions} = 10,000 \text{ millions}$

Checkpoint 1B

1.	Numeral	Indian System	International System
(b)	999999999	99,99,99,999	999,999,999
(c)	70000000	7,00,00,000	70,000,000
(d)	56781234	5,67,81,234	56,781,234

- 30,200,029
 - 603,515,312
 - 619,000,200
 - 861,763,444
- In international system the number $43256526 = 43,256,526$
Thus, the period of the underlined digit 5 is the **thousands period**.
 - In international system the number $19229156 = 19,229,156$
Thus, the period of the underlined digit 9 is the **millions period**.

Checkpoint 1C

- Starting from the highest place on comparing 76354867 and 67384613 we can see that the numbers have the different digits in their same highest places (crores place) such as $7 > 6$.
Thus, the number $7,63,54,867 > 6,73,84,613$.
 - Starting from the highest place on comparing 15675368 and 15683689 we can see that the numbers have the different digits at the ten thousands place such as $7 < 8$.
Thus, the number $1,56,75,368 < 1,56,83,689$.
- Greatest Number: 123876324 (9-digit number)
Smallest Number: 9367547 (7-digit number)

- Greatest Number: 654321 (6-digit number)
Smallest Number: 6 (1-digit number)

- Arrange the numbers in the place value chart as shown.

TC	C	TL	L	TTh	Th	H	T	O
	3	8	0	0	1	3	6	7
		3	8	0	0	7	6	3
			9	8	7	1	6	3
7	6	5	7	6	5	7	6	5

Observe the numbers in the table and make the required descending order of these numbers.

Descending Order: $765765765 > 38001367 > 3800763 > 987163$

- Arrange the numbers in the place value chart as shown.

TC	C	TL	L	TTh	Th	H	T	O
		7	0	0	6	3	0	0
	7	0	6	3	0	0	7	1
7	0	0	6	3	0	0	8	1
		7	0	0	6	3	0	8

Observe the numbers in the table and make the required ascending order of these numbers.

Ascending Order: $7006300 < 7006308 < 70630071 < 700630081$

Practice (Page 21)

- Greatest 8-digit number = 99999999
Thus, the greatest 8-digit even number = $99999999 - 1 = 99999998$
Smallest 8-digit number = 10000000 = Smallest 8-digit even number
- Greatest 8-digit number = 99999999 = Greatest 8-digit odd number
Smallest 8-digit number = 10000000
Thus, the smallest 8-digit odd number = $10000000 + 1 = 10000001$

Checkpoint 1D

- The given digits are 3, 5, 7, 1, 9 and 2.

The smallest number formed using the given digits (without repetition) = 123579

The greatest number formed using the given digits (without repetition) = 975321

- (d) The given digits are 9, 0, 8, 2, 3, 6, 1 and 7.
 The smallest number formed using the given digits (without repetition) = 10236789
 The greatest number formed using the given digits (without repetition) = 98763210

3. The given digits are 4, 6, 3, 8 and 7.
 Smallest 8-digit number using the given digits = 33334678
 Greatest 8-digit number using the given digits = 88887643
4. The given digits are 1, 2, 3, 4, 5, 6, 7 and 8.
 Given the position of the digit 1 is at tens place, thus the required 8-digit number = 23456718

Checkpoint 1E

3. (e) The given number is 1592163.

	Number	The digit after the given place	Rounding off number
Round off to the nearest 1000	1592163	1 (<5)	1592000
Round off to the nearest 10000	1592163	2 (<5)	1590000
Round off to the nearest 100000	1592163	9 (>5)	1600000

Let Us Assess

2. (a) 135742111 = 13,57,42,111
 Number Name: Thirteen crore fifty-seven lakh forty-two thousand one hundred eleven

- (c) 105703205 = 10,57,03,205
 Number Name: Ten crore fifty-seven lakh three thousand two hundred five

3. (a) 14563547
 Using commas to separate periods the number becomes
 1, 45, 63, 547
 Period of the digit 4 = lakhs
 Period of the digit 6 = Thousands
 Period of the digit 5 = Ones
 Period of the digit 7 = Ones
4. (a) Seventy-five lakh seven
 Number: 7500007
 Standard form: 75,00,007
- (c) Seventy-eight million ninety thousand forty-two
 Number: 78090042
 Standard form: 78,090,042
5. (c) Given number = 129126128
 Expanded form = 100000000 + 20000000 + 9000000 + 100000 + 20000 + 6000 + 100 + 20 + 8
9. (a) $4TC + 9C + 0L + 1TTh + 0Th + 6H + 2T + 5O$
 $= 4 \times 100000000 + 9 \times 10000000 + 0 + 1 \times 10000 + 0 + 6 \times 100 + 2 \times 10 + 5 \times 1$
 $= 49,00,10,625$

HOTS

1. (a) The smallest 9-digit number having all different digits = 102345678
 (b) The smallest 9-digit number having three different digits = 100000002
 (c) The smallest 9-digit number having two different digits = 100000000
2. 100 billions galaxies = 100,000,000,000 galaxies
 300 billions stars = 300,000,000,000 stars