1. Knowing our Numbers

Learn and Remember

1. **Digit:** In order to represent any number, we use ten symbols: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. These ten symbols are called digits or figures.

2. **Numeral:** A group of digits denoting a number is called a numeral.

3. Natural numbers are all the numbers from 1 onward.

4. Whole numbers are all the numbers from 0 onward.

5. The smallest natural number is 1 and smallest whole number is 0.

6. There are two systems of numeration:

   (*i*) Indian system   (*ii*) International system.

7. The period in the Indian system of numeration are hundreds, thousands, crores and arab.

8. The period of the International system of numeration are hundreds, thousands, millions, billions and trillions.

9. The successor of a whole number is 1 more than the whole number.

10. The predecessor of a whole number is 1 less than the whole number. There is no predecessor of zero in whole number.

TEXTBOOK QUESTIONS SOLVED

EXERCISE 1.1

Q1. Fill in the blanks

(*a*) 1 lakh = ... ten thousand.

(*b*) 1 million = ... hundred thousand.

(*c*) 1 crore = ... ten lakh.

(*d*) 1 crore = ... million.

(*e*) 1 million = ... lakh.

Sol. (*a*) 10   (*b*) 10   (*c*) 10   (*d*) 10   (*e*) 10.

Q2. Place commas correctly and write the numerals.

   (a) **Seventy-three lakh seventy-five thousand three hundred seven.**

   (b) **Nine crore five lakh forty-one**

   (c) **Seven crore fifty-two lakh twenty-one thousand three hundred two.**

   (d) **Fifty-eight million four hundred twenty-three thousand two hundred.**

   (e) **Twenty-three lakh thirty thousand ten.**

Sol.

(a)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
					7	3	7	5	3	0	7

⇒ 73,75,307

(b)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
				9	0	5	0	0	0	4	1

⇒ 9,05,00,041

(c)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
				7	5	2	2	1	3	0	2

⇒ 7,52,21,302

(d)

Period	Billions			Millions			Thousands			Ones		
Places	HB	TB	B	ThM	T.M.	M	H.Th	T.Th	Th	H	T	O
					5	8	4	2	3	2	0	2

⇒ 58,423,202

(e)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
					2	3	3	0	0	1	2

⇒ 23,30,010

Q3. Insert commas suitably and write the names according to Indian system of numeration.

   (a) **87595762** (b) **8546283** (c) **99900046** (d) **98432701**

Sol.

(a)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
87595762				8	7	5	9	5	7	6	2

⇒ 8,75,95,762

Eight crore, seventy-five lakh, ninety-five thousand seven hundred sixty two.

(b)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
8746283					8	5	4	6	2	8	3

⇒ 85,46,283

Eighty-five lakh, forty-six thousand two hundred eighty-three.

(c)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
99900046				9	9	9	0	0	0	4	6

⇒ 9,99,00,046

Nine crore ninety-nine lakh forty-six.

(d)

Period	Arab		Crores		Lakhs		Thousands		Ones		
Places	T	A	TC	C	TL	L	T.Th.	Th	H	T	O
98432701				9	8	4	3	2	7	0	1

⇒ 9,84,32,701

Nine crore, eighty-four lakh thirty-two thousand seven hundred one.

Q4. Insert commas suitably and write the names according to International system of numeration:

   (a) **78921092** (b) **7452283** (c) **99985102** (d) **48049831**

Sol.

(a)

Period	Billions			Millions			Thousands			Ones		
Places	Th.B	TB	B	ThM	T.M.	M	H.Th	T.Th	Th	H	T	O
78921092					7	8	9	2	1	0	9	2

⇒ 78,921,092

Seventy eight million nine hundred twenty-one thousand ninety-two.

(b)

Period	Billions			Millions			Thousands			Ones		
Places	HB	TB	B	HM	T.M.	M	H.Th	T.Th	Th	H	T	O
7452283						7	4	5	2	2	8	2

⇒ 7,452,283

Seven million four hundred fifty-two thousand two hundred eighty three.

(c)

Period	Billions			Millions			Thousands			Ones		
Places	HB	TB	B	HM	T.M.	M	H.Th	T.Th	Th	H	T	O
99985102					9	9	9	8	5	1	0	2

⇒ 99,985,102

Ninety-nine million nine hundred eighty-five thousand one hundred two.

(d)

Period	Billions			Millions			Thousands			Ones		
Places	HB	TB	B	HM	T.M.	M	H.Th	T.Th	Th	H	T	O
48049531					4	8	0	4	9	8	3	1

⇒ 48,049,831

Forty-eight million forty-nine thousand eight hundred thirty-one.

EXERCISE 1.2

Q1. A book exhibition was held for four days in a school. The number of tickets sold at the counter on the first, second, third and final day was respectively 1094, 1812, 2050 and 2751. Find the total number of tickets sold on all the four days.

Sol.

Number of tickets sold on first day	=	1,094
Number of tickets sold on second day	=	1,812
Number of tickets sold on third day	=	2,050
Number of tickets sold on fourth day	= +	2,751
Total tickets sold	=	7,707

Total 7,707 tickets were sold on all the four days.

Q2. Shekhar is a famous cricket player. He has so far scored 6980 runs in test matches. He wishes to complete 10,000 runs. How many more runs does he need?

Sol.

Runs to achieve	=	10,000
Runs scored	= –	6,980
Runs required	=	3,020

3,020 runs are required to complete 10,000 runs.

Q3. In an election, the successful candidate registered 5,77,500 votes and his nearest rival secured 3,48,700 votes. By what margin did the successful candidate win the election?

Sol.

Number of votes secured by successful candidate	=	5,77,500
Number of votes secured by his nearest rival	= –	3,48,700
Margin between them	=	2,28,800

The successful candidate won by a margin of 2,28,800 votes.

Q4. Kirti Bookstore sold books worth ₹ 2,85,891 in the first week of June and books worth ₹ 4,00,768 in the second week of the month. How much was the sale for the two weeks together? In which week was the sale greater and by how much?

Sol.

Books sold in first week	=	2,85,891
Books sold in second week	= +	4,00,768
Total books sold	=	6,86,659

Since 4,00,768 is greater than 2,85,891. Therefore, sale in second week was greater than first.

$$
\begin{array}{r}
4,00,768 \\
-2,85,891 \\
\hline
1,14,877 \\
\hline
\end{array}
$$

1,14,877 more books were sold in second week than first.

Q5. Find the difference between the greatest and the least number that can be written using the digits 6, 2, 7, 4, 3 each only once.

Sol.

Greatest five digit number	=	76432
Smallest five digit number	= –	23467
Difference	=	52965

= 52,965.

Q6. A machine, on an average, manufactures 2,825 screws a day. How many screws did it produce in the month of January 2006?

Sol. Number of screws manufactured in one day = 2,825

Number of days in the month of January = 31

Total number of screws = 2825 × 31

$$
\begin{array}{r}
2825 \\
\times\ 31 \\
\hline
2825 \\
8475\times \\
\hline
87575 \\
\hline
\end{array}
$$

The machine manufactured total 87,575 screws in the month of January.

Q7. A merchant had ₹ 78,592 with her. She placed an order for purchasing 40 radio sets at ₹ 1,200 each. How much money will remain with her after the purchase?

Sol.

Cost of each radio = 1200	Total money = 78,592
Number of radio ordered = 40	Money spent = – 48,000
Total money spend = 1200 × 40	Money left = 30,592
= 48000	
= 30,592	

Q8. A student multiplied 7236 by 65 instead of multiplying by 56. By how much was his answer greater than the correct answer?

Sol.

Wrong answer = 7236 × 65

$$
\begin{array}{r}
7236 \\
\times\ 65 \\
\hline
36180 \\
43416\times \\
\hline
4,70,340 \\
\hline
\end{array}
$$

Correct answer = 7236 × 56

$$
\begin{array}{r}
7236 \\
\times\ 56 \\
\hline
43416 \\
36180\times \\
\hline
4,05,216 \\
\hline
\end{array}
$$

Difference in answer = 4,70,340 – 4,05,216

$$
\begin{array}{r}
4,70,340 \\
-\ 4,05,216 \\
\hline
65,124 \\
\hline
\end{array}
$$

= 65,124.

Q9. To stitch a shirt 2 m 15 cm cloth is needed. Out of 40 m cloth, how many shirts can be stitched and how much cloth will remain?

Sol. Cloth required to stitch one shirt is 2 m 15 cm

1 m = 100 cm

= 2 × 100 + 15

= 200 + 15

= 215 cm.

Length of cloth is 40 m

= 40 × 100

= 4000 cm.

$$
\begin{array}{r}
215\ \overline{)\ 4000\ }(\ 18 \to \text{shirts} \\
215 \\
\hline
1850 \\
1720 \\
\hline
130 \to \text{Remaining cloth} \\
\hline
\end{array}
$$

18 shirts can be stitched. 130 cm or 1 m 30 cm cloth will remain.

Q10. Medicine is packed in boxes, each weighing 4 kg 500 g. How many such boxes can be loaded in a van which cannot carry beyond 800 kg?

Sol. We know that 1 kg = 1000 g

∴   4 kg 500 g = (4 × 1000 + 500) g

= 4500 g

800 kg = (800 × 1000) g

= 8,00,000

Total number of boxes = 800000 ÷ 4500

$$
\begin{array}{r}
4500\ \overline{)\ 800000\ }(\ 177 \\
4500 \\
\hline
35000 \\
31500 \\
\hline
35000 \\
31500 \\
\hline
\to \text{Remainder}\ \ 3500 \\
\hline
\end{array}
$$

177 boxes can be loaded.

Q11. The distance between the school and the house of a student's house is 1 km 875 m. Everyday she walks both ways. Find the total distance covered by her in six days.

Sol.

	km m
Distance between school and home =	1.875
Distance between home and school =	+ 1.875
Total distance cover in one day =	3.750

= 3 km 750 m

Distance covered in six days = (3km 750m) × 6 = 22 km 500 m

$$\begin{array}{r} 3750 \\ \times\ 6 \\ \hline 22\ km\ 500\ m \end{array}$$

= 22 km 500 m.

Q12. A vessel has 4 litres and 500 ml of curd. In how many glasses each of 25 ml capacity, can it be filled?

Sol. | 1 litre = 1000 millilitre. |

4 litre 500 ml = (4 × 1000 + 500) ml

= (4000 + 500) = 4500 ml.

Total number of glasses = 4500 ml ÷ 25 ml

= 180 glasses.

$$\begin{array}{r} 25\ )\ \overline{4500}\ (\ 180 \\ 25 \\ \hline 200 \\ 200 \\ \hline 200 \\ 200 \\ \hline \times \end{array}$$

EXERCISE 1.3

Q1. Estimate each of the following using general rule:

(a) 730 + 998 (b) 796 – 314

(c) 12,904 + 2,888 (d) 28,292 – 21,496

Sol. (a) Round off to hundreds   (b) Round off to hundreds

730 rounds off to 7,00   796 rounds off to 800

998 rounds off to 1,000   314 rounds off to 300

Estimated sum = 1,700   Estimated difference = 500

(c) Round off to hundreds   (d) Round off to hundreds

12904 rounds off to 13000   28292 rounds off to 28000

2888 rounds off to 3000   21496 rounds off to 21000

Estimated sum = 16,000   Estimated difference = 7000

Q2. Give a rough estimate (by rounding off to nearest hundreds) and also a closer estimate (by rounding off to nearest tens):

(a) 439 + 334 + 4317 (b) 1,08,734 – 47,599

(c) 8325 – 491 (d) 4,89,348 – 48,365

Sol. (a) Round off to hundreds   (b) Round off to hundreds

439 rounded off to 400

334 rounded off to 300   108734 rounded off to 108700

4317 rounded off to 4300   47599 rounded off to 47600

Estimated sum = 5000   Estimated difference = 61100

(c) Round off to hundreds   (d) Round off to hundreds

8325 rounded off to 8300   489348 rounded off to 489300

491 rounded off to 500   48365 rounded off to 48400

Estimated difference = 7800   Estimated difference = 440900

Q3. Estimate the following products using general rule

(a) 578 × 161 (b) 5281 × 3491

(c) 1291 × 592 (d) 9250 × 29.

Sol. (a) 578 × 161

Round off to hundreds

578 is rounded off to 600

161 is rounded off to 200

The estimated product = 600 × 200 = 1,20,000

(b) 5281 × 3491

Round off to thousands

5281 is rounded off to 5,000

3491 is rounded off to 3,500

The estimated product = 5,000 × 3,500 = 1,75,00,000

(c) 1291 × 592

Round off to thousands

1291 is rounded off to 1300

592 is rounded off to 600

The estimated product = 1300 × 600 = 7,80,000

(d) 9250 × 29

9250 is rounded off to 10,000

29 is rounded off to 30

The estimated product = 10,000 × 30 = 3,00,000.