Chapter 1

Unit-I : Number System

4-Digit Numbers

Learning Objectives :

❖ What is 4-Digit Numbers ? ❖ Formation of 4-Digit Numbers ❖ Reading and Writing of 4-Digit Numbers ❖ The Relationship between Ones, Tens, Hundreds and Thousands ❖ 4-Digit Numerals on Abacus ❖ Place Value and Expanded Form of Numbers ❖ Comparison and Ordering of Numbers ❖ Formation of Greatest and Smallest Numbers ❖ Odd and Even Numbers.

What is 4-Digit Numbers ?

Numbers that are made by 4-digits are called 4-digit numbers.

Example : 1000, 1245, 6509, 2075, 3605, 7625, etc.

In the previous class, we have learnt 3-digit numbers.

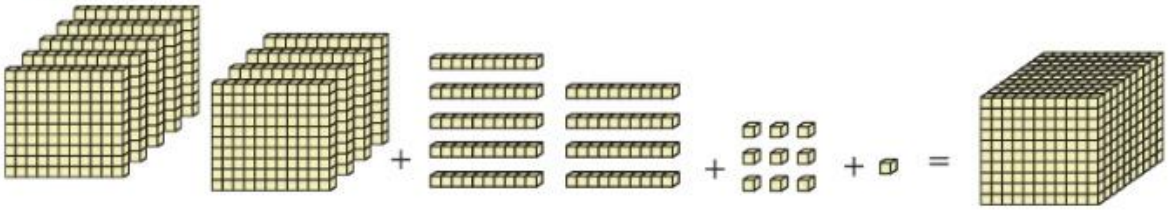
Now we study 4-digit numbers.

- 1 is smallest 1-digit number.
- 9 is greatest 1-digit number.
- 10 (9+1) is smallest 2-digit number.
- 99 is greatest 2-digit number.
- 100 (99 + 1) is smallest 3-digit number.
- 999 is greatest 3-digit number.

Formation of 4-Digit Numbers

For example : How much is 999 + 1 = ?

Solution :



900 + 90 + 9 + 1 = 1000

999 + 1 = 1000

one thousand

Earlier we have learnt about 3-digit numbers. 999 is greatest 3-digit numbers. By adding 1, we get 1000, that is smallest 4-digit number.

➲ Reading and Writing of 4-Digit Numbers

Example 1 : Read 2461 and 3116 aloud.

Solution : We read first thousands digit than hundreds digit and in the tens and ones digit together.

2461 is read as **two thousand four hundred sixty one.**

3116 is read as **three thousand one hundred sixteen.**

We have learnt in class-II that digits from 0 to 9 form all the numbers. A number written in words is known as its number name.

Read the following carefully :

How to write ?	How to read ?
Th H T O 1 0 0 0	One thousand
1 0 0 9 1 0 1 0 1 0 1 1	One thousand nine One thousand ten One thousand eleven
1 0 9 9 1 1 0 0 1 1 0 1	One thousand ninety nine One thousand one hundred One thousand one hundred one

1 1 0 9 1 1 1 0 1 1 1 1	One thousand one hundred nine One thousand one hundred ten One thousand one hundred eleven
1 1 9 9 1 2 0 0 1 2 0 1	One thousand one hundred ninety nine One thousand two hundred One thousand two hundred one
1 2 9 9 1 3 0 0 1 4 0 0	One thousand two hundred ninety nine One thousand three hundred One thousand four hundred
1 9 0 0 1 9 0 1	One thousand nine hundred One thousand nine hundred one
1 9 9 9 2 0 0 0 2 0 0 1	One thousand nine hundred ninety nine Two thousand Two thousand one
2 9 9 9 3 0 0 0 3 0 0 1	Two thousand nine hundred ninety nine Three thousand Three thousand one
3 9 9 9 4 0 0 0	Three thousand nine hundred ninety nine Four thousand
9 9 9 9	Nine thousand nine hundred ninety nine 9999 is the greatest 4-digit number.

Hots Questions

Encircle the 4-digit numbers :

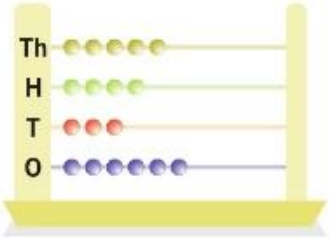
137	6572	733	1339	766	1000	999	1230	789	171
1337	672	8743	339	7766	100	9999	3210	7890	1171

➲ The Relationship between Ones, Tens, Hundreds and Thousands

10 ones makes 1 ten	or	10 ones	= 1 ten
10 tens makes 1 hundred	or	10 tens	= 1 hundred
10 hundreds makes 1 thousand	or	10 hundreds	= 1 thousand

➲ 4-Digit Numerals on Abacus

To show 4-digit numbers on an abacus, we need four spikes for thousands, hundreds, tens and ones.

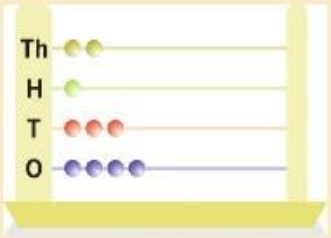


Look at the abacus given on the right.

The abacus shows 5 thousands, 4 hundreds, 3 tens and 6 ones which are written as 5436 and spoken as five thousand and four hundred thirty six.

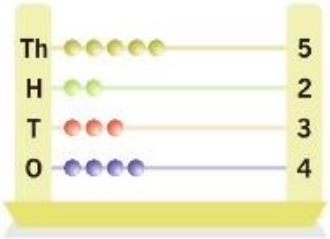
Example 2 : Read the abacus and write the numeral and number name it shows.

Solution :



Numeral	Number Name
2,134	Two thousand one hundred thirty four

⊙ Represent the numeral 5234 on the abacus.



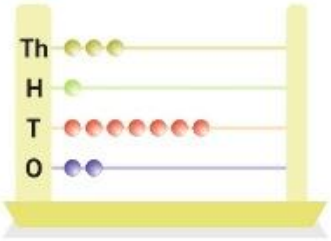
Fact File

If there is 'zero' in any place we draw no beads in that place.

Exercise 1.1

☞ Read each of the following abacuses and write the numeral and the number name it shows :

1.



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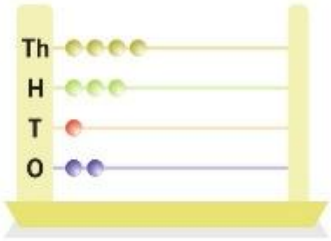

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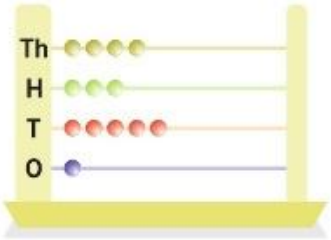

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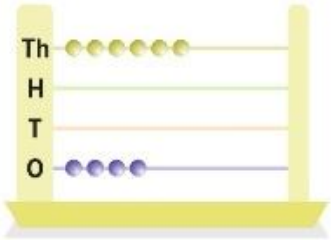

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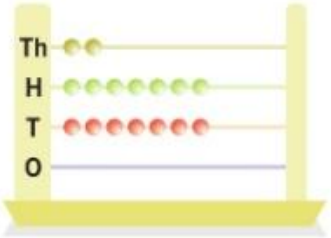

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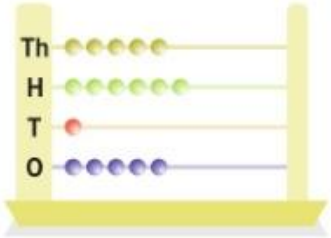


☞ Represent each of the following numerals on the abacus.

7.

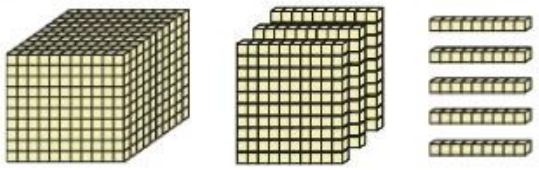
8.

9.

10.

☞ Write the number.

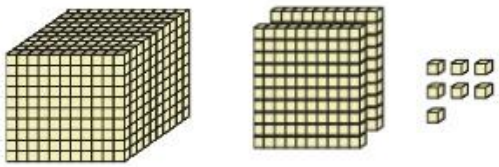
11.



Th	H	T	O
1	3	5	2

= 1352

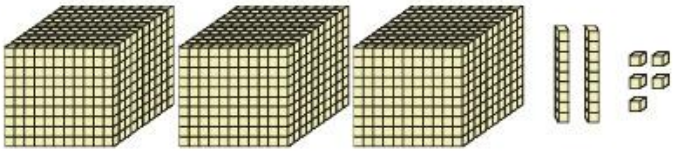
12.



Th	H	T	O

= =

13.



Th	H	T	O

= =

Exercise 1.2

☞ Write the name for the numeral :

1. 1296 _____
2. 1111 _____
3. 2930 _____
4. 1920 _____
5. 6666 _____
6. 3274 _____
7. 4217 _____
8. 8009 _____
9. 7980 _____
10. 9099 _____
11. 8491 _____
12. 9686 _____

Exercise 1.3

☞ Write the numeral for the number-name :

		Th	H	T	O
1.	Five thousand eight hundred ninety one				
2.	Seven thousand eight hundred ninety				
3.	Nine thousand five hundred twenty seven				
4.	Six thousand eight hundred eighty six				
5.	Eight thousand nine hundred sixty seven				
6.	Seven thousand one hundred twenty				
7.	Eight thousand eighty				
8.	Two thousand three hundred fifty six				
9.	One thousand five hundred five				
10.	Three thousand forty six				
11.	Four thousand seven hundred seventy four				

Exercise 1.4

☞ Write next four numbers in increasing order :

1. 3497, 3498, 3499, _____, _____, _____, _____
2. 4026, 4027, 4028, _____, _____, _____, _____
3. 8294, 8295, 8296, _____, _____, _____, _____
4. 1589, 1590, 1591, _____, _____, _____, _____
5. 5675, 5676, 5677, _____, _____, _____, _____

☞ Write next four numbers in decreasing counting order :

6. 4702, 4701, 4700, _____, _____, _____, _____
7. 5673, 5672, 5671, _____, _____, _____, _____
8. 7904, 7903, 7902, _____, _____, _____, _____
9. 4004, 4003, 4002, _____, _____, _____, _____
10. 4093, 4092, 4091, _____, _____, _____, _____

☞ Fill in the blanks :

11. Greatest number of 2-digits = _____
12. Smallest number of 3-digits = _____

13. Greatest number of 3-digits =
14. Smallest number of 4-digits =
15. Greatest number of 4-digits =

☞ Write the predecessor of each number :

16. _____ 3700 17. _____ 8000 18. _____ 2350

☞ Write the successor of each number :

19. 2599 _____ 20. 4999 _____ 21. 3479 _____

➲ Place Value and Expanded Form of Numbers

The place value of any number depends on its place.

Place value table for 4-digit numbers is as follows.

Thousands	Hundreds	Tens	Ones
(Th)	(H)	(T)	(O)
1000	100	10	1

Let us have two numerals 5555 and 4328.

Arrange them in the place value table.

Thousands	Hundreds	Tens	Ones
(Th)	(H)	(T)	(O)
1000	100	10	1
5	5	5	5
4	3	2	8

In 5555, the first digit 5 (from right) is at ones place;
place value of 5 = 5 ones = 5.
The second digit 5 is at tens place;
place value of 5 = 5 tens = 50.
The third digit 5 is at hundreds place;
place value of 5 = 5 hundreds = 500.
The fourth digit 5 is at thousands place;
place value of 5 = 5 thousands = 5000.

Fact File

The place value of a digit in a number is the digit multiplied by its place.

The value of a digit is different at different places in a numeral. Each value is called place value of the digit. The face value of a digit remains the same wherever it is placed.

Expanded Form : The sum of the place values of the digits of a numeral is called its expanded form.

Expanded form of 5555 = 5000 + 500 + 50 + 5

5555 is called the short form.

Expanded form of 4328 = 4000 + 300 + 20 + 8

Fact File

Short form is also called standard form.

Exercise 1.5

☞ Write the numbers in expanded form :

1. 7230 _____
2. 6009 _____
3. 5624 _____
4. 3509 _____
5. 9527 _____
6. 3008 _____
7. 3702 _____
8. 4598 _____

☞ Write the numbers in thousands, hundreds, tens and ones :

9. 5973 _____
10. 8712 _____
11. 1265 _____
12. 4038 _____
13. 3050 _____
14. 4008 _____
15. 2222 _____
16. 3709 _____

Exercise 1.6

☞ Write the following in short form :

1. 3000 + 800 + 0 + 2 _____
2. 3000 + 500 + 70 + 5 _____

3.	5000	+	600	+	50	+	6	_____
4.	7000	+	0	+	30	+	0	_____
5.	1000	+	400	+	80	+	9	_____
6.	7000	+	200	+	20	+	4	_____
7.	7000	+	200	+	50	+	9	_____
8.	9000	+	100	+	20	+	0	_____

☞ Write the number that is :

9. 8 thousands 9 hundreds 0 ten 7 ones _____

10. 9 thousands 0 hundred 0 ten 1 one _____

11. 2 thousands 3 hundreds 0 ten 5 ones _____

12. 7 thousands 0 hundred 5 tens 8 ones _____

13. 3 thousands 7 hundreds 7 tens 0 one _____

14. 4 thousands 2 hundreds 7 tens 3 ones _____

15. 6 thousands 5 hundreds 4 tens 3 ones _____

16. 4 thousands 0 hundred 5 tens 0 one _____

Exercise 1.7

☞ Write the place value of the coloured digit :

1. Mahatma Gandhi was born in the year 1869. 6 tens = 60

2. He went to South Africa in 1893. _____

3. Gandhiji came back to India in 1915. _____

4. He led the Quit India Movement in 1942. _____

5. He helped India get freedom in 1947. _____

☞ Match the expanded form with the short form :

6. 5 thousands 5 hundreds 5 tens	**5505**
7. 5 thousands 5 tens 5 ones	5550
8. 5 thousands 5 hundreds	5555
9. 5 thousands 5 hundreds 5 tens 5 ones	5500
10. 5 thousands 5 hundreds 5 ones	5055

☞ Interchange the digits at the hundreds place with the digits at tens place and rewrite the number :

11. 3950 _____ **12.** 8172 _____

13. 2021 _____ **14.** 4702 _____

15. 1526 _____ 16. 8120 _____

17. Find the difference in the place values of the two fives in 9552. _____

18. Encircle the numerals in which the place value of the digit 6 is 60 :

69, 6077, 4641, 5061, 3690, 2065

Exercise 1.8

☞ Counting by twos, write the numerals from :

1. 1899 to 1907 _____ _____ _____ _____ _____
2. 5998 to 6006 _____ _____ _____ _____ _____
3. 1226 to 1234 _____ _____ _____ _____ _____
4. 3249 to 3257 _____ _____ _____ _____ _____

☞ Counting by tens, write five numerals starting from :

5. 3100 _____ _____ _____ _____ _____
6. 4000 _____ _____ _____ _____ _____
7. 2760 _____ _____ _____ _____ _____
8. 2070 _____ _____ _____ _____ _____

☞ Counting by hundreds, write five numerals, starting from :

9. 2794 _____ _____ _____ _____ _____
10. 6007 _____ _____ _____ _____ _____
11. 2780 _____ _____ _____ _____ _____
12. 4670 _____ _____ _____ _____ _____

☞ Counting by thousands, write five numerals, starting from :

13. 3900 _____ _____ _____ _____ _____
14. 5002 _____ _____ _____ _____ _____
15. 3020 _____ _____ _____ _____ _____
16. 4536 _____ _____ _____ _____ _____

☞ Write the numerals further by observing the pattern :

17. 2406, 2416, 2426, _____ _____ _____ _____
18. 2056, 3056, 4056, _____ _____ _____ _____
19. 2165, 2166, 2167, _____ _____ _____ _____
20. 5384, 5484, 5584, _____ _____ _____ _____

Comparison and Ordering of Numbers

When two numbers have the same value, we use the = sign ('equal to') to express the relationship between them.

For example : 4215 = 4215

When two numbers do not have the same value, we use the > sign ('greater than') or the < sign ('less than') depending on which number is on the left.

For example :

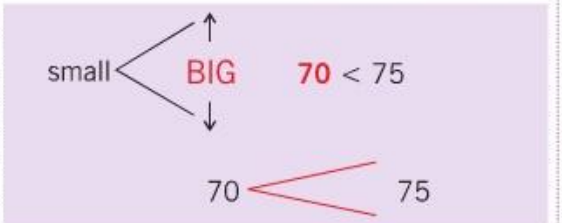
4132 is greater than 2341.

4132 > 2341

2341 is less than 4132.

2341 < 4132

The small end of the signs, > and <, always points to the smaller number.



When the number of digits is different :

For example : Compare 948 and 1039.

The number with more digits is always greater.

948 < 1039.

Th	*H*	*T*	*O*	
	9	4	8	⟶ 3-digit number
1	0	3	9	⟶ 4-digit number

Exercise 1.9

☞ Compare and put > or < in between the numbers :

1. 9210 ☐ 2109	**2.** 5055 ☐ 5505	**3.** 4023 ☐ 3024
4. 1026 ☐ 999	**5.** 9201 ☐ 9012	**6.** 2174 ☐ 8295
7. 8327 ☐ 8295	**8.** 2506 ☐ 2056	**9.** 4726 ☐ 3276
10. 5050 ☐ 5550	**11.** 9347 ☐ 8447	**12.** 5201 ☐ 5210
13. 8075 ☐ 8002	**14.** 7515 ☐ 7155	**15.** 844 ☐ 1000

☞ Encircle the smallest number :

16.	3205	4289	3526	3010
17.	4370	3740	7304	7403
18.	1080	1800	1008	8001
19.	9129	9291	1299	9921
20.	1199	1999	9111	1991

☞ Encircle the greatest number :

21.	651	2162	6215	1265
22.	5882	3678	8249	8924

23.	6160	6061	6610	6110
24.	9911	9991	1119	9191
25.	4444	7777	9999	9744

☞ Rewrite the numbers in increasing or ascending order :

26.	1375	375	3175	7153	_____
27.	4586	5586	2586	5658	_____
28.	1959	1529	1259	1925	_____
29.	2236	2706	2716	2268	_____
30.	9191	2929	9993	9292	_____

☞ Rewrite the numbers in decreasing or descending order :

31.	3450	345	5430	4350	_____
32.	1265	7625	2675	6175	_____
33.	7432	7732	7237	2377	_____
34.	2659	2859	2759	6592	_____
35.	4567	4675	4765	4576	_____

Exercise 1.10

1. Write the successor of the greatest 3-digit number. _____
Is it the smallest 4-digit number ? _____

2. Write the successor of the greatest 2-digit number. _____
Is it the smallest 3-digit number ? _____

3. Write any four 4-digit numerals using the digits 3, 5, 6 and 8. _____

_____ _____ _____ _____

Now arrange them in ascending order.

_____

☞ State whether the following numbers are arranged in ascending or descending order :

4. 2034, 2304, 2340, 2403 _____

5. 777, 985, 1150, 3418 _____

6. 4269, 3099, 2875, 999 _____

7. 6954, 6945, 6594, 6549 _____

☞ Answer in Yes/No :

8. Is the smallest number of four digits the predecessor of the greatest number of 3-digits ? _____

9. Is the greatest 3-digit number the predecessor of the smallest 4-digit number ? _____

10. Number of students in Gold Mary School is 2858 and in Green Public School is 2299. Which School has more children ?

Formation of Greatest and Smallest Numbers

Example 3 : Form the greatest number using the digits 3, 2, 7 and 1.
Solution : Write the digits in the decreasing order ⇒ 7 3 2 1
The greatest number that can be formed using the digits is 7321.

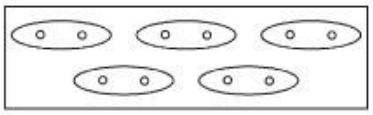
Example 4 : Form the greatest number using the digits 4, 5, 9 and 0.
Solution : Write the digits in the decreasing order ⇒ 9 5 4 0
The greatest number that can be formed using the digits is 9540.

Example 5 : Form the smallest number using the digits 3, 2, 7 and 1.
Solution : Write the digits in the increasing order ⇒ 1 2 3 7
The smallest number that can be formed using the digits is 1237.

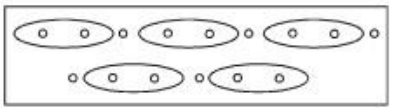
Example 6 : Form the smallest number using the digits 4, 5, 9 and 0.
Solution : Write the digits in increasing order ⇒ 0 4 5 9
0 at the beginning of a number has no value.
Write 0 after the smallest digit to form the smallest number.
The smallest number that can be formed using the digits is 4059.

Odd and Even Numbers

Even numbers can be put in pairs (groups of 2). 6 is even.
Even numbers end with 2, 4, 6, 8, or 0.
For example : 2, 14, 26, 18, 30, etc.



Odd numbers have one left over when you put them in pairs. 7 is odd.
Odd numbers end with 1, 3, 5, 7 or 9.
For example : 1, 23, 35, 57, 89, etc.



Exercise 1.11

Make the smallest possible number using the following digits :

1. 7, 5, 6, 2 **2.** 7, 8, 0, 3
3. 2, 3, 5, 0 **4.** 2, 7, 6, 8
5. 7, 0, 9, 8 **6.** 9, 3, 2, 5
7. 1, 7, 0, 2 **8.** 3, 0, 0, 2
9. 6, 3, 2, 9 **10.** 1, 3, 2, 0

☞ Make the largest possible number using the following digits :

11. 2, 8, 0, 9 **12.** 2, 5, 9, 8

13. 1, 8, 5, 8 **14.** 3, 6, 9, 7

15. 8, 9, 6, 7 **16.** 5, 3, 7, 0

17. 2, 6, 3, 5 **18.** 4, 5, 0, 3

19. 4, 0, 7, 9 **20.** 3, 5, 6, 8

21. Encircle the odd numbers :

121, 360, 63, 249, 25, 654

22. Encircle the even numbers :

23, 38, 237, 576, 810, 139

Look only at the ones place to decide whether a number is odd or even.

23. Build the greatest and the smallest 3-digit number using repetition the digit 5, 7.

Let's Recall

1. How many hundreds make 1 thousand ?

2. 1 hundred = _____ ones or _____ tens

3. What has to be added to the greatest 3-digit number to get the smallest 4-digit number ?

4. Is the predecessor of a number greater or smaller than the given number ?

5. What happens to the value of a number, as the number moves to the left, in a place value chart ?

6. What number do you have to add to get the successor of a given number ?

7. 72 has :

(a) 7 tens **(b)** 70 tens **(c)** 2 tens **(d)** None of these

8. In which one of the following numbers the digits cannot be rearranged to get another 3-digit number ?

(a) 400 **(b)** 425 **(c)** 968 **(d)** 129

9. The number consisting of 2 tens and 6 thousands is :

(a) 6123 **(b)** 1632 **(c)** 1236 **(d)** 6213

10. The face value of 6 in 16 is :

(a) 60 **(b)** 6 **(c)** 600 **(d)** None of these

Chapter 2

Indian Regional and Roman Numerals

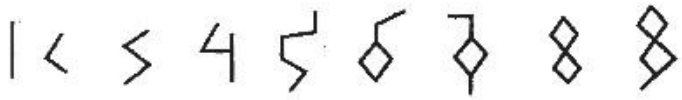
Learning Objectives :

❖ International Number System ❖ Indian Regional Numerals ❖ Roman Numerals ❖ Use of Roman Numerals in India.

➲ International Number System

We use daily digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. They are called International digits as they are used widely over the world. They were originated in Hindu culture, travelled to Arabia and then to Europe. So, they are also called Hindu-Arabic digits.

The original form of Hindu-Arabic numerals in Arabia was :



Each symbol has as many segments as the number. Compare them with the International digits.

➲ Indian Regional Numerals

The different regions or states in India have different symbols for the ten digits forming various numerals.

State (Language)	Numbers
Uttar Pradesh (Hindi)	० १ २ ३ ४ ५ ६ ७ ८ ९
Odisha (Oriya)	୦ ୧ ୨ ୩ ୪ ୫ ୬ ୭ ୮ ୯
Gujarat (Gujarati)	૦ ૧ ૨ ૩ ૪ ૫ ૬ ૭ ૮ ૯
Karnataka (Kannad)	೦ ೧ ೨ ೩ ೪ ೫ ೬ ೭ ೮ ೯
West Bengal (Bengali)	০ ১ ২ ৩ ৪ ৫ ৬ ৭ ৮ ৯
Maharashtra (Marathi)	० १ २ ३ ४ ५ ६ ७ ८ ९
Punjab (Punjabi)	੦ ੧ ੨ ੩ ੪ ੫ ੬ ੭ ੮ ੯
Jammu and Kashmir (Urdu)	٠ ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩

Digits are the symbols which form the various numerals. Most regions follow the ten-based place value system. The numerals for numbers beyond nine are formed throughout in the same manner.

Place value system was not used in Tamil Nadu. They had special symbols for 10, 100 and 1000.

The numerals formed by the International digits are called International numerals or Hindu-Arabic numerals. Those numerals formed by the other digits given above are called regional numerals.

➲ Roman Numerals

Before the Arab traders carried Hindu-Arabic numerals to Europe, most people in Europe used Roman numerals. Romans ruled most part of Europe for a long time.

Romans had no symbol for zero. No one had thought of it ! Zero was first thought of by an Indian mathematician.

The Roman numerals are formed by only 7 symbols—I, V, X, L, C, D and M.

The values of the symbols are as follows.

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

Here in class III, we shall learn the use of first three symbols I, V and X. Roman numerals for numbers upto thirty nine are formed by using only three symbols I, V and X.

The numerals are formed by using the following rules.

Rule 1 : Repetition of I and X means addition.

For example :

II = 1 + 1 = 2 XX = 10 + 10 = 20

III = 1 + 1 + 1 = 3 XXX = 10 + 10 + 10 = 30

Rule 1A : I and X cannot be repeated more than thrice.

1B : V is never repeated.

Rule 2 : If I is written to the left of V or X, it is subtracted from the value of the symbol on the right. *For example :*

IV = 5 – 1 = 4 IX = 10 – 1 = 9

Rule 2 (A) : V is never subtracted.

2 (B) : V can never be written to the left of X.

Rule 3 : If a symbol is written to the right of one of greater value, we add its value to the value of the symbol on the left.

For example :

VI	=	5 + 1	= 6	XIV	=	10 + 4	= 14
VII	=	5 + 2	= 7	XI	=	10 + 1	= 11
VIII	=	5 + 3	= 8	XII	=	10 + 2	= 12
XV	=	10 + 5	= 15	XIII	=	10 + 3	= 13
XVI	=	10 + 6	= 16	XXV	=	20 + 5	= 25

Following the above rules, the Roman numerals corresponding to Hindu-Arabic numerals from 1-39 can be written as follows.

1	I	11	XI	21	XXI	31	XXXI
2	II	12	XII	22	XXII	32	XXXII
3	III	13	XIII	23	XXIII	33	XXXIII
4	IV	14	XIV	24	XXIV	34	XXXIV
5	V	15	XV	25	XXV	35	XXXV
6	VI	16	XVI	26	XXVI	36	XXXVI
7	VII	17	XVII	27	XXVII	37	XXXVII
8	VIII	18	XVIII	28	XXVIII	38	XXXVIII
9	IX	19	XIX	29	XXIX	39	XXXIX
10	X	20	XX	30	XXX		

➲ Use of Roman Numerals in India

1. The small Roman numerals are generally used to mark page numbers or parts of a question.
   For example : i, ii, iii, iv, v, vi, vii, viii, ix, x .....
2. Roman numerals are used to number classes *e.g.*, you write your class on your exercise-book as Class III.
3. On the face of some clocks, the hours are marked in Roman numerals.

Exercise 2

☞ Put a tick (✓) on the correct matching and cross (✗) the wrong :

1.	XX	→	20		**2.**	XV	→	15	
3.	XI	→	11		**4.**	VI	→	4	
5.	VVV	→	15		**6.**	XXVIII	→	28	
7.	XXX	→	30		**8.**	IX	→	11	
9.	XIV	→	16		**10.**	XIII	→	7	

☞ Write the Roman numerals for :

11.	13 _____	**12.**	21 _____
13.	6 _____	**14.**	9 _____
15.	11 _____	**16.**	4 _____
17.	37 _____	**18.**	17 _____
19.	25 _____	**20.**	39 _____
21.	28 _____	**22.**	19 _____

☞ Write the Hindu-Arabic numerals for :

23.	XXIV _____	**24.**	XXVI _____
25.	XV _____	**26.**	XVI _____
27.	XIV _____	**28.**	IV _____
29.	XXVIII _____	**30.**	XXXIX _____
31.	XXXVI _____	**32.**	XXXIII _____
33.	XXXI _____	**34.**	XXIX _____

☞ Encircle the correct Roman numerals :

35.	39	=	XXXIX, IXXXX	**36.**	21	=	IXX, XXI
37.	25	=	XXVX, XXV	**38.**	10	=	X, VV
39.	3	=	III, IIV	**40.**	4	=	IIII, IV

41. Match the numerals of the two columns that indicate the same number :

IV	9
V	21
IX	16
XXI	4
XVI	29
XXIX	5

Chapter 3

Unit-II : Fundamental Operations

Addition

Learning Objectives :

❖ What is Addition ? ❖ What is Regrouping ? ❖ Addition of 4-Digit Numbers without Regrouping or Carrying ❖ Addition of 4-Digit Numbers with Regrouping or Carrying ❖ Properties of Addition ❖ Addition of Ten, Hundred and Thousand ❖ Finding Missing Digits in Addition Operation ❖ Word Problems on Addition ❖ Estimating/ Rounding the Sum.

What is Addition ?

Addition is finding the total or sum by combining two or more numbers.

For example : $7 + 6 = 13$, $7 + 4 + 3 = 14$

The numbers which are added are called addends and the result after addition is called sum or total.

What is Regrouping ?

In addition, many times we get such situation that we get sum or total of ones, tens, hundreds and so on 10 or more than 10. In this situation, we regroup that sum or total of ones, tens, hundreds ... .

For example : $25 + 16 = ?$

5 ones + 6 ones = 11 ones.

Regroup ones 11 ones into 1 tens + 1 ones.

Write 1 ones at ones place carry 1 over ten to tens place.

Now 1 ten (carrying) + 2 tens + 1 ten = 4 tens.

In same way, we regroup tens, hundreds, thousands and so on.

	T	O
	2	5
+	1	6
	4	1

Addition of 4-Digit Numbers without Regrouping or Carrying

When we add numbers, we first write them such that ones come below ones and so on. Then we add ones, tens, hundreds and so on.

Example 1 : Add 4203 and 2162.

Solution : We start adding from ones.

3 ones	+	2 ones	=	5 ones		Th	H	T	O
0 ten	+	6 tens	=	6 tens		4	2	0	3
2 hundreds	+	1 hundred	=	3 hundreds	+	2	1	6	2
4 thousands	+	2 thousands	=	6 thousands		6	3	6	5

Exercise 3.1

Add :

1.

Th	H	T	O
1	7	3	7
+ 7	2	2	1

2.

Th	H	T	O
3	4	5	6
+ 5	4	3	2

3.

Th	H	T	O
3	6	4	5
+ 2	3	5	4

4.

Th	H	T	O
3	6	1	2
+ 5	2	6	7

5.

Th	H	T	O
6	8	0	4
+ 3	0	5	5

6.

Th	H	T	O
2	4	2	5
+ 3	4	5	2

7.

Th	H	T	O
2	1	3	3
	1	3	5
+		2	0

8.

Th	H	T	O
5	7	4	3
1	0	2	4
+	2	0	1

9.

Th	H	T	O
4	1	0	5
	3	4	1
+ 3	2	2	1

Mental Maths

Add 1 to the largest 3-digit number.
How many digits does the new number have ? _____

Addition of 4-Digit Numbers with Regrouping or Carrying

Example 2 : Add 5698 and 2475.
Solution : We start adding from ones.

8 ones + 5 ones = 13 ones
Regroup 13 into 1 ten 3 ones.
Write 3 at ones place, carry 1 ten.
1 ten + 9 tens + 7 tens = 17 tens
Regroup 17 tens into 1 hundred 7 tens.
Write 7 at tens place, carry 1 hundred.
1 hundred + 6 hundreds + 4 hundreds = 11 hundreds
Regroup 11 hundreds into 1 thousand 1 hundred.
Write 1 at hundreds place, carry 1 thousand.
1 thousand + 5 thousands + 2 thousands = 8 thousands
Write 8 at thousands place.
Thus, 5698 + 2475 = 8173

	Th	H	T	O
	5	6	9	8
+	2	4	7	5
	8	1	7	3

Exercise 3.2

Find the sum :

1.

Th	H	T	O
1	8	7	9
+ 2	4	2	5

Common Mistake

Th	H	T	O	
3	4	3	8	
+ 2	2	8	8	✗
5	6	11	16	

Th	H	T	O	
	1	1		
3	4	3	8	
+ 2	2	8	8	✓
5	7	2	6	

2.

Th	H	T	O
4	8	7	8
+ 2	3	4	7

3.

Th	H	T	O
3	9	7	2
+ 1	3	4	7

4.

Th	H	T	O
4	4	6	2
+ 1	2	3	8

5.

Th	H	T	O
5	1	2	9
+ 3	2	4	8

6.

Th	H	T	O
1	2	1	9
+ 7	5	2	5

7.

Th	H	T	O
3	6	4	5
+ 2	4	6	7

8.

Th	H	T	O
1	5	4	7
+ 5	5	6	4

9.

Th	H	T	O
7	6	0	1
+	5	9	9

10.

Th	H	T	O
3	4	4	7
+ 3	6	9	3

11.

Th	H	T	O
7	0	8	2
+	5	0	8

12.

Th	H	T	O
3	8	5	7
+ 5	1	6	4

13.

Th	H	T	O
3	4	3	6
+ 1	8	7	5

14.

Th	H	T	O
5	5	6	6
+ 2	4	6	4

15.

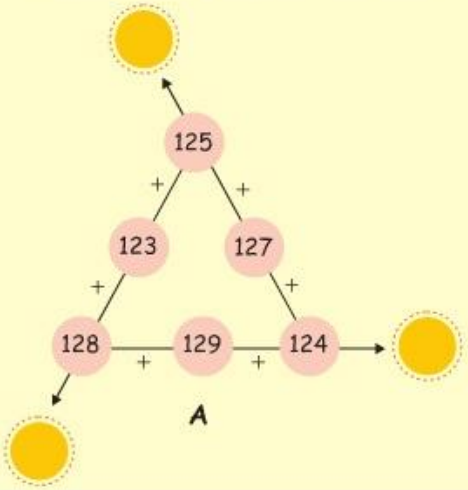
Th	H	T	O
4	3	1	9
+ 2	4	7	3

16.

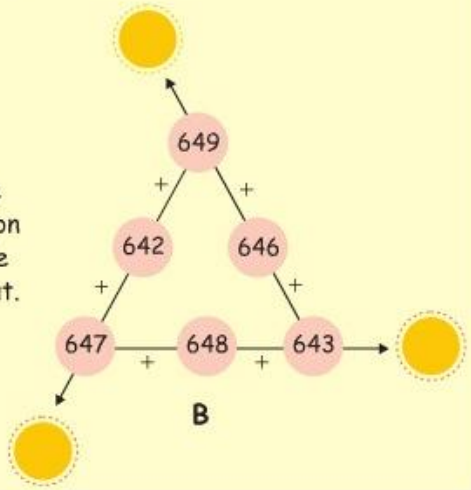
Th	H	T	O
2	3	6	5
+ 1	4	3	9

Learning By Doing

In a Magic Triangle, the sum of the three numbers on each side of the triangle is the same. Which is a magic triangle A _____ or B _____ ?



Add the numbers on each side to find out.



Exercise 3.3

☞ Find the sum :

1.

Th	H	T	O
	6	9	3
7	6	4	8
+	7	8	9

2.

Th	H	T	O
7	8	1	2
1	1	9	0
+	7	0	8

3.

Th	H	T	O
5	4	7	9
1	9	8	6
+ 1	0	6	9

☞ Find the sum :

4.

Th	H	T	O
3	5	5	8
2	1	4	9
+ 3	9	7	8

5.

Th	H	T	O
2	4	3	7
6	6	6	6
+	6	5	4

6.

Th	H	T	O
4	8	7	6
2	8	1	6
+	5	0	6

7.

Th	H	T	O
3	5	2	7
4	8	0	9
+ 1	0	8	3

8.

Th	H	T	O
1	4	9	2
2	2	9	6
+ 4	2	3	2

9.

Th	H	T	O
1	3	7	5
2	5	2	9
+	3	9	7

10.

Th	H	T	O
1	0	7	4
4	1	9	5
+ 1	6	2	1

11.

Th	H	T	O
4	5	3	9
1	6	9	8
+ 1	9	2	5

12.

Th	H	T	O
1	9	2	5
4	6	7	4
+ 2	7	4	8

☞ Write in columns and add (in your notebook) :

13. 2643 + 3076 + 1205 **14.** 5056 + 1818 + 628

15. 4238 + 1999 + 99 **16.** 5002 + 2049 + 1970

17. 2746 + 5999 + 274 **18.** 5866 + 2783 + 786

Mental Maths

A. Make 100.

1. 30 + ... = 100 2. ..... + 70 = 100 3. 45 + ... = 100
4. ..... + 48 = 100 5. 56 + ... = 100 6. ..... + 85 = 100

B. Make 1000.

1. 300 + ... = 1000 2. ..... + 625 = 1000 3. 400 + ... = 1000
4. ..... + 329 = 1000 5. ..... + 200 = 1000 6. 476 + ... = 1000

Properties of Addition

1. Order Property : Two numbers can be added in any order, but the sum remains the same.

For example : 1853 + 3436 = 5289 or 3436 + 1853 = 5289

Thus, 1853 + 3436 = 3436 + 1853 = 5289

2. Grouping Property : The sum of three or more numbers does not change even when their grouping is changed.

For example : (2314 + 3124) + 1567 = 5438 + 1567 = 7005

2314 + (3124 + 1567) = 2314 + 4691 = 7005

(2314 + 1567) + 3124 = 3881 + 3124 = 7005

So (2314 + 3124) + 1567 = 2314 + (3124 + 1567) = 7005

3. Additive Property for Zero : If zero is added to a number, the sum is the number itself.

For example : 2469 + 0 = 2469 or 0 + 2469 = 2469

Addition of Ten, Hundred or Thousand

1. On adding 10 to a number, the tens digit increases by 1.

For example : 6425 + 10 = 6435

2. On adding 100 to a number, the hundreds digit increases by 1.

For example : 2875 + 100 = 2975

3. On adding 1000 to a number, the thousands digit increases by 1.

For example : 4694 + 1000 = 5694

➲ Finding Missing Digits in Addition Operation

Example 3 : Fill the missing digits :

Solution :

	Th	H	T	O
	6	☐	8	5
+	2	1	☐	7
	8	5	8	☐

	Th	H	T	O
	6	3	8	5
+	2	1	9	7
	8	5	8	2

5 ones + 7 ones = 12 ones. Regroup 12 ones into 1 ten and 2 ones. So write 2 at ones box.
Now we have 1 ten (carrying) and 8 tens = 9 tens. What we can add to 9 tens to get 8. Certainly 9 tens, then we get 1 hundred (carrying) and 8 tens. So write 9 at tens box.
Now we have 1 hundred (carrying) and 1 hundred = 2 hundreds. What we can add in 2 to get 5. Certainly 3. So write 3 at hundreds box.

Exercise 3.4

☞ Fill in the blanks :

1. 0 + 3025 = _____
2. 1330 + 0 = _____
3. 1509 + 3215 + 2816 = 2816 + _____ 1509
4. _____ + 7512 = 7512
5. 4325 + 10 = _____
6. Write six numbers adding on 10 each time :
   1136 _____ _____ _____ _____ _____ _____
7. Write six numbers adding on 100 each time :
   2347 _____ _____ _____ _____ _____ _____
8. Write six numbers adding on 1000 each time :
   2079 _____ _____ _____ _____ _____ _____
9. Skip counting in tens, write the numbers from :
   1235 to 1275 _____ _____ _____ _____
10. Skip counting in hundreds, write the numbers from :
    1382 to 1782 _____ _____ _____ _____

☞ Find the missing digit of following addition operation :

11.

Th	H	T	O
□	1	5	0
+ 3	□	8	9
6	8	3	□

12.

Th	H	T	O
4	□	7	□
+ 5	1	□	6
9	6	4	2

13.

Th	H	T	O
□	7	8	5
2	□	3	8
□	2	2	□

14.

Th	H	T	O
□	9	7	□
+ 2	3	4	6
7	□	2	2

15.

Th	H	T	O
3	□	6	5
+ □	8	3	8
6	3	0	3

16.

Th	H	T	O
□	8	□	6
+ 2	6	9	□
7	5	2	3

Learning By Doing

Take out all your textbooks of Maths, Science, Social Studies and others. Write down the number of pages in each textbook. Add these numbers. Did you get an even number or an odd number ?

➲ Word Problems on Addition

How can we know that this problem is of addition ?

If any word problem has add, plus, put together, altogether, total, sum, sum total, result, how much and how many words then it is word problem of addition.

Example 4 : In our public library, there are 4635 English books, 2976 Hindi books and 1456 Urdu books. How many books are there in all ?

Solution :

Number of English books = 4635

Number of Hindi books = 2976

Number of Urdu books = 1456

Total number of books = 9067

2	1	1	
4	6	3	5
2	9	7	6
+ 1	4	5	6
9	0	6	7

Exercise 3.5

☞ Do the following sums in your exercise book :

1. There are 650 packets of milk in a dairy. The Mother Dairy truck delivered 297 more packets of milk. How many packets of milk are there in the dairy ?

2. There are 365 people in a compartment of a train. In another compartment there are 289 people. How many people are there in both the compartments ?
3. In a box there were 1499 pencils and in a carton box there were 788 pencils. How many pencils were there in all ?
4. On a particular day, 875 boys and 562 girls were present in the school. Find the total number of students present in the school.
5. In a garden, there are 375 roses, 642 marigolds and 142 lilies. How many flowers are there in the garden ?
6. On Saturday, 1475 men, 309 women and 2787 children visited the Science Museum. How many people in all visited the museum on Saturday ?
7. The public library bought 2947 books from the Delhi Book Fair and 5050 books from the World Book Fair in 2019. How many books in all did the library buy ?

Estimating/Rounding the Sum

You can use rounding off to **estimate** the sum of two numbers.

Estimating the sum can help check your answer.

Example 5 : Find the estimated sum as well as the actual sum of 36 and 43.

Solution :

	3	6	rounds up to	4	0
+	4	3	rounds down to	+ 4	0
	7	9 → actual sum		8	0 → estimated sum

The estimated sum of 36 and 43 is 80 while the actual sum is 79.

Exercise 3.6

Estimate the answer by rounding off the numbers to the nearest ten. Solve the question to check your answer :

1.
	4	5	rounds to
+	2	8	rounds to

2.
	2	6	rounds to
+	5	5	rounds to

3.

	6	2
+	1	1

rounds to
rounds to

+		

4.

	1	7
+	8	3

rounds to
rounds to

+		

5.

	5	6
+	3	1

rounds to
rounds to

+		

6.

	4	9
+	2	5

rounds to
rounds to

+		

Field Trip

⊙ *Next time you go out to eat with your family, collect Bills from at least 2 restaurants and add the price without GST. Find out what is GST and how does it affect your bill?*

Let's Recall

1. What is addition ?
2. Write the terms of addition.
3. What is additive property of zero ?
4. 10 hundreds = _____ thousand.
5. _____ tens = 1 hundred.
6. _____ ones = 1 ten.
7. The sum of 710 and 180 is _____ .

   (a) 880 **(b)** 890 **(c)** 790 **(d)** None of these
8. If in a garden, there are 1500 herbs, 1440 shrubs and 500 trees, then the total number of plants is _____ .

   (a) 3400 **(b)** 4740 **(c)** 3440 **(d)** 2540
9. One thousand more than 6540 is _____ .

   (a) 7540 **(b)** 7640 **(c)** 8640 **(d)** None of these

Chapter 4

Subtraction

Learning Objectives :

❖ What is Subtraction ? ❖ Subtraction of 4-Digit Numbers without Regrouping or Borrowing ❖ Subtraction of 4-Digit Numbers with Regrouping or Borrowing ❖ How We can Check Answer of Subtraction Sum ? ❖ Subtraction of Zero, Ten, Hundred or Thousand ❖ Finding Missing Digits in Subtraction Operation ❖ Word Problems on Subtraction ❖ Estimating the Sum and Difference.

What is Subtraction ?

Subtraction is an arithmetic operation that represents the operation of removing objects from a collection. Subtraction is signified by minus sign (–). In subtraction, a subtrahend is subtracted from a minuend.

For example :

$$\begin{array}{rcl} 4\ 7\ 5\ 6 & \longrightarrow & \text{minuend} \\ -\ 2\ 3\ 2\ 4 & \longrightarrow & \text{subtrahend} \\ \hline 2\ 4\ 3\ 2 & \longrightarrow & \text{difference} \end{array}$$

Subtraction of 4-Digit Numbers without Regrouping or Borrowing

When we subtract numbers, we first write them such that ones come below ones, tens below tens and so on. Then we subtract ones, tens, hundreds and so on.

Example 1 : Subtract 2134 from 4345.

Solution : We start from ones.

5 ones – 4 ones = 1 one
4 tens – 3 tens = 1 ten
3 hundreds – 1 hundred = 2 hundreds
4 thousands – 2 thousands = 2 thousands

	Th	*H*	*T*	*O*
	4	3	4	5
–	2	1	3	4
	2	2	1	1

Exercise 4.1

Common Mistake

Th	H	T	O
2	3	4	6
–	11	3	4 ✗
2	2	3	3 4

Th	H	T	O
2	3	4	6
– 1	1	3	4 ✓
1	2	1	2

☞ Subtract :

1.

Th	H	T	O
9	3	0	5
– 8	2	0	4

2.

Th	H	T	O
5	4	7	8
– 3	2	5	7

3.

Th	H	T	O
8	7	3	7
– 5	4	2	5

4.

Th	H	T	O
9	8	7	6
– 3	4	5	6

5.

Th	H	T	O
5	8	5	4
– 3	7	2	3

6.

Th	H	T	O
6	8	6	7
– 5	0	6	4

7.

Th	H	T	O
4	1	0	5
– 3	0	0	3

Subtraction of 4-Digit Numbers with Regrouping or Borrowing

Example 2 : Subtract 2896 from 8215

Solution : We start from ones. We can not subtract 6 ones from 5 ones. So we regroup 1 ten 5 ones into 15 ones.
15 ones – 6 ones = 9 ones. Write 9 at ones place.
Now we can not subtract 9 from 0. So we regroup 2 hundreds and 0 ten into 1 hundred 10 tens.
10 tens – 9 tens = 1 ten
Write 1 at ones place.

Th	H	T	O
7	11	10	5
8	2	1	5
– 2	8	9	6
5	3	1	9

Now we can not subtract 8 hundreds from 1 hundred. So we regroup 8 thousands and 1 hundred into 7 thousands and 11 hundreds.

11 hundreds – 8 hundreds = 3 hundreds
Now, 7 thousands – 2 thousands = 5 thousands

How We can Check Answer of Subtraction Sum ?

Rule : If we want to check any subtraction sum, add the difference to the smaller number. If you must get the bigger number as the answer your sum is right and if you must not get then your answer is wrong.

Example 3 : Subtract 2143 from 4856 and check.

Solution :

Th	H	T	O	
4	8	5	6	
− 2	1	4	3	
2	7	1	3	→ Difference
+ 2	1	4	3	→ Smaller number
4	8	5	6	→ Bigger number

Exercise 4.2

Subtract :

1.

Th	H	T	O
1	8	7	1
−	9	6	8

Common Mistake

Th	H	T	O	
8	3	2	5	
− 4	8	6	7	✗
2	5	4	2	

Th	H	T	O	
8	3	2	5	
− 4	8	6	7	✓
3	4	5	8	

2.

Th	H	T	O
9	3	4	7
− 2	8	7	8

3.

Th	H	T	O
3	4	3	6
− 1	8	7	8

4.

Th	H	T	O
9	8	0	2
− 2	5	4	3

5.

Th	H	T	O
3	4	5	6
− 2	5	7	8

6.

Th	H	T	O
4	6	9	2
− 3	8	8	8

7.

Th	H	T	O
5	2	2	2
− 2	6	4	3

8.

Th	H	T	O
4	0	0	2
− 1	2	7	1

9.

Th	H	T	O
4	3	4	0
− 2	0	2	7

10.

Th	H	T	O
4	9	0	0
− 2	8	3	7

11.

Th	H	T	O
4	2	0	0
− 4	0	0	1

12.

Th	H	T	O
7	0	0	0
− 3	3	3	3

13.

Th	H	T	O
5	0	0	3
− 2	9	9	4

☞ Subtract :

14.

Th	H	T	O
4	7	3	5
− 2	3	5	8

15.

Th	H	T	O
6	3	3	7
− 2	3	1	8

16.

Th	H	T	O
1	2	4	0
−	8	7	6

17.

Th	H	T	O
3	7	8	3
− 2	6	7	2

18.

Th	H	T	O
3	8	7	3
− 2	4	6	9

19.

Th	H	T	O
5	7	0	0
− 2	6	9	9

20.

Th	H	T	O
5	1	1	3
− 1	8	4	5

21.

Th	H	T	O
4	7	0	9
− 3	4	8	9

22.

Th	H	T	O
3	7	4	5
− 1	6	8	6

☞ Write the columns and subtract (in your exercise book) :

23. 3431 from 4000 ..... **24.** 865 from 1003 .....

25. 2592 from 4325 ..... **26.** 2087 from 3420 .....

27. 1238 from 2784 ..... **28.** 2672 from 3609 .....

Hots Questions

I am a 3-digit number. If you subtract 1 from me, you will get a 2-digit number and you need to regroup hundreds, tens and ones. Which number am I?

Exercise 4.3

☞ Subtract in your exercise book and write the difference in given space :

1. 1309 – 340 = _____	**2.** 8807 – 5196 = _____
3. 7093 – 4534 = _____	**4.** 6873 – 5094 = _____
5. 4539 – 1698 = _____	**6.** 5492 – 2296 = _____
7. 3942 – 2379 = _____	**8.** 4444 – 2969 = _____
9. 2863 – 1887 = _____	**10.** 5155 – 2954 = _____
11. 5674 – 4748 = _____	**12.** 5000 – 137 = _____
13. 5325 – 1489 = _____	**14.** 4114 – 2176 = _____
15. 9876 – 5983 = _____	

Learning By Doing

Work in pairs. Make a set of digit cards numbered from 0 to 9.

Digit Cards

- Make a Th H T O grid.
- One student picks any 4 cards.
- She/He arranges the cards in descending order and writes the number in the first row of the grid.
- She/He now arranges the cards in ascending order and writes in the second row of the grid.
- She/He write the difference in the third row.
- Now it is the turn of the other student.

Th	H	T	O

Th H T O grid

Subtraction of Zero, Ten, Hundred or Thousand

1. If we subtract zero from a number, we get the number itself.
   For example : 4695 – 0 = 4695
2. When we subtract one ten from a number, the tens digit decreases by 1.
   For example : 4976 – 10 = 4966
3. When we subtract one hundred from a number, the hundreds digit decreases by 1.
   For example : 8765 – 100 = 8665
4. When we subtract one thousand from a number, the thousands digit decreases by 1.
   For example : 9906 – 1000 = 8906

Finding Missing Digits in Subtraction Operation

Example 4 : Fill the missing digits :

Solution :

Th	H	T	O
7	☐	6	3
– ☐	8	☐	5
2	5	2	8

Th	H	T	O
7	3	6	3
– 4	8	3	5
2	5	2	8

- We can not subtract 3 from 5, so we regroup 6 tens and 3 ones into 5 tens and 13 ones. Now 13 ones – 5 ones = 8 ones
- 5 tens – 2 tens (Ans) = 3 tens, so write 3 at tens box.
- After subtracting 8 hundreds from unknown number, we get 5 hundreds, so it is 13. Therefore write 3 at hundred box. We need to regrouping 7 thousands and 3 hundreds into 6 thousands and 13 hundreds. So now you have 6 at thousands place. 6 thousands – 2 thousands = 4 thousands. So write 4 at thousands box.

Exercise 4.4

Fill in the blanks :

1. 2592 – 100 = _____
2. 1488 – 100 = _____
3. 2264 – 0 = _____
4. 1641 – 10 = _____
5. 3059 – 100 = _____
6. 1407 – 10 = _____
7. 6103 – 1000 = _____
8. 5983 – 0 = _____
9. 8876 – 10 = _____
10. 3059 – 1000 = _____

11.

7	5	0	☐
– 3	☐	5	8
4	0	4	8

12.

	5	3	☐
–	1	☐	4
	☐	1	8

13.

4	☐	3	6
– ☐	2	☐	7
1	9	1	☐

14.

☐	4	☐	7
– 1	3	8	☐
1	☐	1	2

15.

5	☐	4	☐
– ☐	2	0	3
1	8	☐	6

16.

6	8	0	0
– 1	4	2	☐
5	☐	8	0

17.

8	☐	3	☐
– 5	4	1	8
☐	3	☐	1

18.

6	5	4	☐
– 2	☐	4	2
4	0	0	2

19.

3	2	8	4
– 2	☐	☐	7
☐	1	5	☐

Word Problems on Subtraction

Follow the same steps discussed in the lesson of addition for solving word problems.

Some common key words used to express subtraction word problems are subtract, minus, take away, reduce, left, how much less/more than.

Example 5 : There are 5063 children in a village. 2869 of them go to school. How many children do not go to school?

Solution :

Number of children in the village = 5063
Number of children going to school = 2869
Number of children not going to school = 2194

		9	15	13
	5	0	6	3
−	2	8	6	9
	2	1	9	4

Exercise 4.5

Do these sums in your exercise book :

1. A van carried 2500 bottles of Pepsi. The shopkeeper delivered 1698 bottles. How many bottles were left ?
2. 4207 people came in a meeting. There were only 2460 chairs. How many people had to stand ?
3. Subtract the greatest 3-digit number from the smallest 4-digit number.
4. 4000 apples were bought on Republic Day. If 3166 apples were distributed, how many were left ?
5. There are 1500 seats in a cinema hall. On second last Sunday 1278 persons viewed a show. How many seats were vacant ?
6. There are 2784 children in a village. 1238 of them are boys. How many girls are there ?
7. Mount Everest is 8848 m high. Mount Kanchenjunga is 8598 m high. How much higher is Everest than Kanchenjunga ?
8. There were 8088 bags of wheat in a godown. If 6386 bags were sold out, how many bags were left ?

➲ Estimating the Sum and Difference

Rule : We round off a digit less than 5 to a previous 10 and 5 or more than 5 to the next 10.

Look at these :

$56 - 23 = 60 - 20 = 40$ (*Rounded off*)

$56 - 23 = 33$ (*Accurate*)

Exercise 4.6

☞ Estimate the answer by rounding off the numbers to nearest ten :

1. 48 – 22 **2.** 63 – 28 **3.** 455 – 322 **4.** 733 – 280

5. 286 – 124 **6.** 433 – 168 **7.** 893 – 496 **8.** 502 – 279

Let's Recall

1. What is subtraction ?
2. What is minuend ?
3. What is subtrahend ?
4. What answer is obtained when we subtract zero from any number ?
5. What answer is obtained when we subtract a number from itself ?
6. The chart shows the number of pages Meenal read during four days.

Day	Monday	Tuesday	Wednesday	Thursday
Pages Read	24	17	31	26

How many more pages did Meenal read on Wednesday than on Tuesday ?

(a) 26 **(b)** 16 **(c)** 14 **(d)** 24

7. 1000 less than 7700 is _____ .

(a) 7000 **(b)** 7500 **(c)** 6700 **(d)** 7600

8. Rajiv had 8 baseball cards. He got some more baseball cards for his birthday, then he had 17 in all. How many baseball cards did he get for his birthday ?

(a) 7 **(b)** 8 **(c)** 6 **(d)** 9

Chapter 5

Multiplication

Learning Objectives :

❖ What is Multiplication ? ❖ Multiplication Tables (From 1-10) ❖ Multiplication of 4-Digit Numbers by 1-Digit Numbers (without Carrying) ❖ Multiplication of 3-Digit Numbers with 1-Digit Numbers (with Carrying) ❖ Properties of Multiplication ❖ Multiplication by 10, 100 or 1000 ❖ Multiplication by 20, 30, ... 90, 200, 300 ..... ❖ Multiplication of 2-Digit Numbers by 2-Digit Numbers ❖ Multiplication 3-Digit Numbers by 2-Digit Numbers ❖ Word Problems on Multiplication.

What is Multiplication ?

Multiplication is repeated addition. In a multiplication sum, the number to be multiplied is called the multiplicand, the number by which we multiply is called the multiplier and the result of multiplication is called product.

$2 \times 3 = 6$, 2 is the multiplicand, 3 is the multiplier and 6 is the product.

Look at the pictures given below. There are 3 group of 2 chocolates each.

There are $2 + 2 + 2 = 6$ chocolates in all. 2 taken 3 times makes 6.

$2 \times 3 = 6$ is a multiplication fact.

Given below are 4 groups of 3 bananas each.

Fact File

For each multiplication fact, there is a corresponding repeated addition.

There are $3 + 3 + 3 + 3 = 12$ bananas in all. 3 taken 4 times makes 12.

$4 \times 3 = 12$ is a multiplication fact.

Multiplication Tables (From 1-10)

In previous class we have already learnt the multiplication tables from 1 to 10. Complete the grid and revise your tables :

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2			6				14			
3									27	
4					20					
5			15							
6										
7							49			
8			24					64		
9				36						
10						60				100

Multiplying with the Help of Tables 11 to 20

[Learn Tables 11 to 20 from Advance Table Book.]

Exercise 5.1

1. Fill in the blanks :

(a) $12 \times 6 =$ _____ **(b)** $14 \times 6 =$ _____ **(c)** $13 \times 7 =$ _____

(d) $18 \times 4 =$ _____ **(e)** $17 \times 7 =$ _____ **(f)** $14 \times 8 =$ _____

(g) $16 \times$ _____ $= 64$ **(h)** $14 \times$ _____ $= 98$ **(i)** $17 \times$ _____ $= 85$

2. Roma weaves a sweater of 16 balls of wool. How many balls are required to weave 8 such sweaters ?

3. Mona reads 5 stories daily. How many stories will she read in 15 days ?

4. There are 12 bananas in a bunch. How many bananas will there be in 8 such bunches ?

5. There are 9 rows of desks and 15 desks in each row in a hall. What is the number of desks in that hall ?

6. There are 17 students in a class. Each boy gets 7 books. How many books will be required ?

Mental Maths

- Fill in the blanks :

1. 11 × _____ = 11	5. _____ × 7 = 7	9. 19 × _____ = 171
2. _____ × 9 = 126	6. 13 × 5 = _____	10. _____ × 8 = 128
3. 14 × 3 = _____	7. 17 × 6 = _____	11. 12 × _____ = 36
4. 19 × _____ = 19	8. _____ × 6 = 102	12. 15 × _____ = 105

➲ Multiplication of 4-Digit Numbers by 1-Digit Numbers (without Carrying)

Example 1 : Multiply 3124 by 2.

Solution : 4 ones × 2 = 8 ones
2 tens × 2 = 4 tens
1 hundred × 2 = 2 hundreds
3 thousands × 2 = 6 thousands

3	1	2	4
		×	2
6	2	4	8

Thus, 3124 × 2 = 6248

➲ Multiplication of 3-Digit Numbers with 1-Digit Numbers (with Carrying)

Example 2 : Multiply 278 by 8.

Solution :

8 × 8 ones = 64 ones = 6 tens (carry) + 4 ones
7 × 8 tens = 56 tens
56 tens + 6 tens (carry) = 62 tens
= 6 hundreds (carry) + 2 tens
2 × 8 hundreds = 16 hundreds
16 hundreds + 6 hundreds (carry) = 22 hundreds
= 2 thousand 2 hundreds

	H	T	O
	6	6	
	2	7	8
		×	8
2	2	2	4

Thus, 278 × 8 = 2224.

Example 3 : Multiply 3465 by 4.

Solution : 4×5 ones $= 20$ ones $= 2$ tens (carry) $+ 0$ ones

4×6 tens $= 24$ tens

24 tens $+ 2$ tens (carrying) $= 26$ tens

$= 2$ hundreds (carry) $+ 6$ tens

4×4 hundreds $= 16$ hundreds

16 hundreds $+ 2$ hundreds (carrying) $= 18$ hundreds

$= 1$ thousand (carry) $+ 8$ hundreds

4×3 thousands $= 12$ thousands $= 12$ thousands $+ 1$ thousand $= 13$ thousands

Thus, $3465 \times 4 = 13860$.

Th	H	T	O
1	2	2	
3	4	6	5
		×	4
1 3	8	6	0

Fact File

The method in which numbers to be multiplied are arranged in appropriate columns, i.e., Ones, Tens, Hundreds..... is known as column or standard method of multiplication.

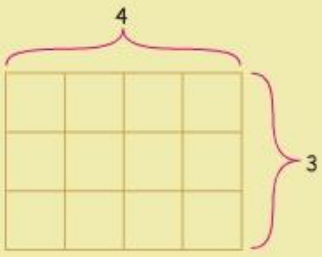
Hots Questions

Activity

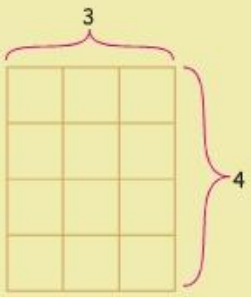
A4 sheets of paper, pencil, eraser and scale.

Steps

1. Draw rectangles for 4×3 and 3×4 as shown below.



$4 \times 3 = 12$



$3 \times 4 = 12$

2. From the rectangles observe that $4 \times 3 = 3 \times 4$.
3. Show by drawing rectangles that

$5 \times 6 = 6 \times 5$ $\quad 2 \times 4 = 4 \times 2$ $\quad 3 \times 2 = 2 \times 3$

Revise Multiplication Tables

1. Students to sit with head down on the table.
2. Teacher to call out numbers, if it is in the table of 7 the students to raise their head and say POP !

For example : numbers called 5, 8, 11, 14 — students to raise head at 14 and say POP !

Exercise 5.2

☞ Use the column method to multiply the following numbers :

1. 25×7 **2.** 42×8 **3.** 34×5 **4.** 38×4

☞ Use the lattice method to multiply the following numbers :

5. 40×8 **6.** 49×6 **7.** 33×5 **8.** 36×6

☞ Multiply :

9.

H	T	O
4	4	4
	×	2

10.

Th	H	T	O
4	4	2	3
		×	2

11.

H	T	O
1	3	3
	×	3

12.

H	T	O
2	2	1
	×	4

13.

H	T	O
5	2	3
	×	4

14.

H	T	O
3	1	7
	×	5

15.

Th	H	T	O
2	3	3	2
		×	3

16.

H	T	O
1	8	9
	×	3

17.

Th	H	T	O
1	2	9	8
		×	4

18.

Th	H	T	O
2	3	3	7
		×	3

19.

H	T	O
9	2	9
	×	9

20.

Th	H	T	O
1	1	9	9
		×	7

21.

Th	H	T	O
1	1	9	4
		×	8

22.

Th	H	T	O
1	3	1	7
		×	6

23.

Th	H	T	O
2	2	1	6
		×	4

24.

Th	H	T	O
1	1	0	8
		×	9

Hots Questions

Sunny had one note of ₹ 200 and 2 notes of ₹ 50 each. Tony had 10 coins of ₹ 10 each.
Who had more money?

Exercise 5.3

Multiply :

1.

Th	H	T	O
1	4	0	8
		×	6

2.

H	T	O
9	9	9
	×	8

3.

Th	H	T	O
1	6	8	4
		×	5

4.

Th	H	T	O
1	0	8	5
		×	7

5.

Th	H	T	O
2	8	7	6
		×	3

6.

Th	H	T	O
1	8	2	7
		×	4

7.

H	T	O
9	8	7
	×	9

8.

Th	H	T	O
1	5	7	8
		×	5

9.

Th	H	T	O
1	2	6	8
		×	7

10.

Th	H	T	O
1	4	8	5
		×	6

11.

Th	H	T	O
2	5	5	7
		×	3

12.

Th	H	T	O
1	9	4	6
		×	5

13.

Th	H	T	O
1	3	7	4
		×	7

14.

Th	H	T	O
1	1	2	2
		×	8

15.

Th	H	T	O
1	5	3	6
		×	4

16.

Th	H	T	O
1	0	5	7
		×	9

17.

Th	H	T	O
2	3	3	4
		×	3

18.

Th	H	T	O
4	9	7	5
		×	2

19.

Th	H	T	O
1	1	5	8
		×	8

20.

Th	H	T	O
1	0	2	5
		×	5

Mental Maths

⊙ Quick Multiplication :

3 4 3 × 2 = 6 8 6 ↖↖↖

2 1 1 × 5 = 1 0 5 5 ↖↖↖

Try these :

1. 410 × 2 = _____ 2. 223 × 3 = _____ 3. 202 × 4 = _____
4. 244 × 2 = _____ 5. 211 × 6 = _____ 6. 233 × 3 = _____

➲ Properties of Multiplication

1. *Order Property :* Multiplying two numbers in either order, the product remains the same.

   For example : $8 \times 7 = 56$, $9 \times 6 = 54$

2. *Grouping Property :* The product of three numbers remains the same even when the grouping of numbers is changed.

   For example : $(4 \times 3) \times 5 = 12 \times 5 = 60 \rightarrow 4 \times (3 \times 5) = 4 \times 15 = 60$

   $(4 \times 5) \times 3 = 20 \times 3 = 60$

3. *Multiplicative Property of 1 :* The product of a number and 1 is the number itself.

   For example : $6935 \times 1 = 6935$

4. *Multiplicative Property of 0 :* The product of a number and zero is zero.

   For example : $2869 \times 0 = 0$

➲ Multiplication by 10, 100 or 1000

By multiplying a given number by 10, 100 or 1000, write one, two or three zeroes respectively to the right of the given number. Remember, 10, 100 and 1000 has one, two and three zeroes respectively to their right.

For example :

48×10	$= 48\,0$	$=$	480
48×100	$= 48\,00$	$=$	4800
48×1000	$= 48\,000$	$=$	48000

➲ Multiplication by 20, 30, ..., 90, 200, 300, ...

Example 4 : Multiply 16 by 600.

Solution : $16 \times 600 = 16 \times 6$ hundreds $= 96$ hundreds $= 96\,00 = 9600$

Exercise 5.4

☞ Fill in the blanks :

1. $28 \times 48 \times 19 = 19 \times$ _____ $\times 28$

2. $53 \times 72 \times 17 = 17 \times 72 \times$ _____

3. 1797×1	= _____	4. 1797×0	= _____
5. 6×1000	= _____	6. 686×10	= _____
7. 15×50	= _____	8. 12×80	= _____
9. 13×700	= _____	10. 16×400	= _____
11. 4×2000	= _____	12. 3000×3	= _____
13. 200×9	= _____	14. 1400×2	= _____
15. 50×50	= _____	16. 20×30	= _____
17. 20×300	= _____	18. 30×200	= _____
19. 91×100	= _____	20. 42×200	= _____
21. 13×500	= _____	22. 17×500	= _____
23. 240×40	= _____	24. 19×400	= _____

Mental Maths

- To multiply a number by 9, multiply by 10. Subtract the number from product.
  $45 \times 9 \rightarrow 45 \times 10 = 450 \rightarrow 450 - 45 = 405$
  So, $45 \times 9 = 405$
- **Try these :**
  1. 52×9 = _____ 2. 29×9 = _____ 3. 48×9 = _____
  4. 77×9 = _____ 5. 33×9 = _____ 6. 81×9 = _____

Multiplication of 2-Digit Numbers by 2-Digit Numbers

Example 5 : Multiply 27 by 46.

Solution : Multiplying ones

46×7 ones = 322 ones or 322

Multiplying tens

46×2 tens = 92 tens or 920 ones

Now 322 + 920 = 1242

	T	O
	4	6
×	2	7
3	2	2
9	2	×
1	2	4	2

Exercise 5.5

Multiply in your exercise book :

1.

T	O
7	5
× 1	8

2.

T	O
8	1
× 5	4

3.

T	O
4	8
× 2	8

4.

T	O
6	9
× 1	9

5.

T	O
8	2
× 9	8

6.

T	O
7	6
× 1	7

7.

T	O
8	4
× 6	4

8.

T	O
8	9
× 3	9

Mental Maths

- To multiply a number by 99, multiply the number by 100. Subtract the number from the product.
  $45 \times 99 \rightarrow 45 \times 100 = 4500 \rightarrow 4500 - 45 = 4455$
  So, $45 \times 99 = 4455$
- Try these :
  1. $34 \times 99 =$ _____ 2. $48 \times 99 =$ _____ 3. $65 \times 99 =$ _____
  4. $72 \times 99 =$ _____ 5. $86 \times 99 =$ _____ 6. $94 \times 99 =$ _____

Multiplication 3-Digit Numbers by 2-Digit Numbers

Example 6 : There are 42 pearls in a necklace. How many pearls will be there in 149 such necklaces ?

Solution : Multiplying by ones

149×2 ones $= 298$ ones $= 298$

149×4 tens $= 596$ tens $= 5960$

$298 + 5960 = 6258$

Total number of pearls = 6258

H	T	O	
1	4	9	
	× 4	2	
	2	9	8
5	9	6	×
6	2	5	8

Exercise 5.6

Multiply (in your exercise book) :

1. 148×45 **2.** 117×26 **3.** 328×14

4. 247×16
5. 237×19
6. 197×28
7. 108×39
8. 253×16
9. 236×39
10. 169×54
11. 416×19
12. 235×31
13. 172×28
14. 325×27
15. 231×42
16. 172×30
17. 235×31
18. 315×29
19. 313×31
20. 406×19
21. 414×23

Hots Questions

Ram celebrating his 65th birthday today. Write his age in months _____ and days _____ .

➲ Word Problems on Multiplication

We come across many situations in life, where we use multiplication facts to solve word problems.

Example 7 : Rahul buys a shirt for ₹ 255. If he wants to buy 12 shirts, how much money will he have to spend?

Solution : Cost of 1 shirt = ₹ 255

Cost of 12 shirts = ₹ 255×12 or

Cost of 12 shirts = ₹ 3060

Rahul will have to spend = ₹ 3060.

	H	T	O
	2	5	5
	×	1	2
	5	1	0
2	5	5	×
3	0	6	0

Exercise 5.7

☞ Do these sums in your exercise book :

1. A crate contains 24 Pepsi bottles. How many bottles are there in 75 such crates ?
2. Sania buys 24 litres of milk daily. How much milk will she buy in 1 year ? [Note : 1 year = 365 days]
3. Students of a school went to visit a zoo in 20 buses. If there are 50 students in each bus, how many students went to visit the zoo ?
4. Mona purchased 20 packets of crayons. Each packet contains 12 crayons. How many crayons are there in all ?

5. There are 48 candles in a box. How many candles are there in 54 such boxes ?
6. There are 128 apple trees in a garden. Each tree has 25 apples. How many apples are there in the garden ?
7. Each bag has 98 kilograms of rice. How many kilograms of rice will be there in 96 bags ?
8. There are 168 hours in a week. How many hours are there in 52 weeks ?
9. Cost of one shirt is 224 rupees. What is the cost of 44 such shirts ?
10. The cost of a lamp is 255 rupees. Find the cost of 36 such lamps.
11. There are 48 mangoes in a box. How many mangoes will be there in 188 boxes ?
12. There are 144 balloons in one packet. How many balloons will be there in 65 packets ?

Let's Recall

1. What is the result of a multiplication sum called ?
2. _____ hundreds make a thousand.
3. $4 \times 5 = 20$; _____ is the multicand; _____ is the multiplier and _____ is the product.
4. How many wheels do you need for making 8 tricycles ?
5. What is the product of 96 and 0 ?
6. What is the product of 64 and 1000 ?
7. Mrs Mohini bought 24 glasses, out of these 8 broke. The number of glasses left with Mrs Mohini is _____ .

   (a) $24 + 8$ **(b)** $24 - 8$ **(c)** 24×8 **(d)** None of these
8. The number of days in 15 simple years is _____ .

   (a) 15×12 **(b)** 15×30 **(c)** 15×365 **(d)** None of these
9. There are 25 boys and 15 girls in a class. The total number of students in the class is _____ .

   (a) $25 + 15$ **(b)** $25 - 15$ **(c)** 25×15 **(d)** None of these
10. The cost of a toy is ₹ 95. The cost of 10 such toys will be _____ .

    (a) $95 + 10$ **(b)** $95 - 1$ **(c)** 95×10 **(d)** None of these

Chapter 6

Division

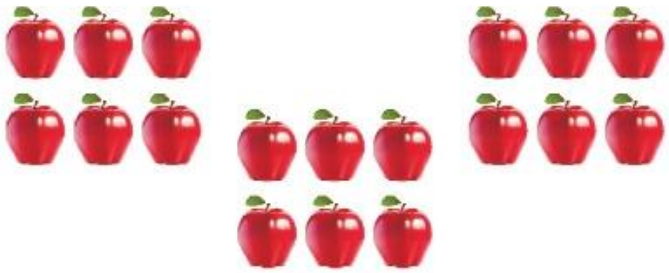
Learning Objectives :

❖ What is Division ? ❖ Division of 2-Digit Numbers by 1-Digit Numbers ❖ Division of 3-Digit Numbers by 1-Digit Numbers ❖ Division of 4-Digit Numbers by 1-Digit Numbers ❖ Properties of Division ❖ Division by 10 or 100 ❖ Division by 2-Digit Numbers (11–20) ❖ Word Problems on Division.

What is Division ?

Division of two natural numbers is the process of calculating the number of times one number is contained within one another. In other words, the process of equal sharing is called division. '÷' is a sign of division and is called divided by.

18 apples shared equally among 3 children is the same as 18 apples divided equally into 3 groups, resulting in 6 apples for each group. Division is almost opposite process of multiplication.



Fact File

In equal sharing you know how many groups are there and can find how many in each group.

This can be represented using symbols, as $18 \div 3 = 6$. Division is faster and shorter than repeated subtraction.

In the division number sentence $18 \div 3 = 6$.

- The number to be divided is called the dividend (18). The number by which the total is divided and is called divisor (3). Answer or recall of division is called quotient (6).

Mental Maths

⊙ There are 9 children and 18 mangoes. Richard divides the 18 mangoes among them. Each child gets 2 mangoes. Fill in the ◯ .

Dividend = ◯ Divisor = ◯ Quotient = ◯

Exercise 6.1

☞ Divide the following into equal groups and write division sentences for each :

1. Groups of 5

2. Groups of 4

3. Groups of 6

Long Form of Division

Division number sentence $18 \div 3 = 6$; in the long division form, can also be written as

$$\begin{array}{r} 6 \leftarrow \text{Quotient} \\ \text{Divisor} \rightarrow 3\overline{)18} \leftarrow \text{Dividend} \end{array}$$

➲ Division of 2-Digit Numbers by 1-Digit Numbers

Example 1 : Divide 95 by 6.

Solution : 6 goes 1 time in 9 tens.

$6 \times 1 = 6$. Now subtract 6 from 9 ($9 - 6 = 3$).

So, remainder is 3 tens or 30 ones

Bring 5 ones at ones place, it makes $30 + 5 = 35$

6 goes 5 times in 35.

$6 \times 5 = 30$. Subtract 30 from 35.

$35 - 30 = 5$

Remainder = 5 Quotient = 15

$$\begin{array}{r} 15 \\ 6\overline{)95} \\ 6\downarrow \\ \hline 35 \\ 30 \\ \hline 5 \end{array}$$

Exercise 6.2

Common Mistake

$$\begin{array}{r} 18 \\ 3\overline{)65} \\ 3 \\ \hline 26 \\ 24 \\ \hline 2 \end{array} \quad \times \qquad \begin{array}{r} 21 \\ 3\overline{)65} \\ 6 \\ \hline 5 \\ 3 \\ \hline 2 \end{array} \quad \checkmark$$

Divide (in your exercise book) :

1. $52 \div 3$
2. $83 \div 6$
3. $91 \div 3$
4. $83 \div 3$
5. $61 \div 7$
6. $51 \div 6$
7. $71 \div 9$
8. $69 \div 4$
9. $83 \div 9$
10. $76 \div 6$
11. $47 \div 5$
12. $92 \div 8$
13. $73 \div 9$
14. $67 \div 7$
15. $74 \div 8$
16. $55 \div 4$
17. $85 \div 7$
18. $82 \div 3$
19. $99 \div 5$
20. $63 \div 8$
21. $89 \div 7$
22. $77 \div 6$
23. $95 \div 4$
24. $96 \div 9$

Hots Questions

Samarth is going to an orphanage to distribute fruits on his birthday. If there are 36 children at the orphanage, how many dozens of bananas should he buy so that each child gets 4 bananas?

Division of 3-Digit Numbers by 1-Digit Numbers

Example 2 : Divide 897 by 7.

Solution : 7 goes 1 time in 8 hundreds.
$7 \times 1 = 7$. Subtract 7 from 8 $(8 - 7 = 1)$.
Remainder = 1 hundred = 10 tens
Bring 9 down at tens place, it makes 19 tens.
7 goes 2 times in 19 tens.
$7 \times 2 = 14$. Subtract 14 from 19. $(19 - 14 = 5)$.
Remainder = 5 tens = 50 ones.
Bring 7 down at ones place, it makes 57 ones.
7 goes 8 times in 57 ones.
$7 \times 8 = 56$. Subtract 56 from 57 $(57 - 56 = 1)$.
Remainder = 1 Quotient = 128

$$\begin{array}{r} 128 \\ 7\overline{)897} \\ 7\downarrow \\ \hline 19 \\ 14\downarrow \\ \hline 57 \\ 56 \\ \hline 1 \end{array}$$

Exercise 6.3

Divide (in your exercise book) :

1. $432 \div 2$
2. $555 \div 3$
3. $728 \div 9$
4. $736 \div 7$
5. $593 \div 2$
6. $532 \div 3$
7. $462 \div 4$
8. $478 \div 5$

9. 752 ÷ 5	**10.** 644 ÷ 5	**11.** 924 ÷ 8	**12.** 872 ÷ 6
13. 816 ÷ 4	**14.** 654 ÷ 6	**15.** 902 ÷ 8	**16.** 538 ÷ 7
17. 861 ÷ 7	**18.** 482 ÷ 3	**19.** 975 ÷ 8	**20.** 916 ÷ 6
21. 522 ÷ 4	**22.** 820 ÷ 9	**23.** 783 ÷ 5	**24.** 409 ÷ 3

➲ Division of 4-Digit Numbers by 1-Digit Numbers

Example 3 : Divide 3149 by 5.
Solution : 5 does not go in 3, so divide 31 by 5.
5 goes 6 times in 31.
5 × 6 = 30. Subtract 30 from 31 (31 – 30 = 1).
Remainder = 1 hundred = 10 tens
Bring 4 tens down, it makes 10 + 4 = 14 tens
5 goes 2 times in 14.
5 × 2 = 10. Subtract 10 from 14 (14 – 10 = 4).
Remainder = 4 tens = 40 ones.
Bring 9 ones down, it makes 40 + 9 = 49 ones.
5 goes 9 times in 49.
9 × 5 = 45. Subtract 45 from 49 (49 – 45 = 4).
Remainder = 4 Quotient = 629

```
  629
5)3149
  30↓
  14
  10↓
  49
  45
   4
```

Exercise 6.4

☞ Divide (in your exercise book) :

1. 3807 ÷ 6	**2.** 2984 ÷ 9	**3.** 2522 ÷ 7
4. 4646 ÷ 6	**5.** 2803 ÷ 5	**6.** 5852 ÷ 8
7. 3400 ÷ 6	**8.** 5000 ÷ 8	**9.** 5840 ÷ 7
10. 5410 ÷ 7	**11.** 7819 ÷ 6	**12.** 4096 ÷ 8
13. 2890 ÷ 3	**14.** 7000 ÷ 9	**15.** 5321 ÷ 2

➲ Properties of Division

1. When we divide any number by 1, we get the number itself.
   For example : 6975 ÷ 1 = 6975
2. When we divide any number by itself, we get 1 as the quotient.
   For example : 2645 ÷ 2645 = 1
3. When we divide zero by any number, we get zero.
   For example : 0 ÷ 7129 = 0

Division by 10 or 100

1. On dividing a number having zeroes at the right side by 10 or 100, the quotient contains one or two zeroes less respectively.
   For example : $3600 \div 10 = 360\boxed{0} = 360$
   $3600 \div 100 = 36\boxed{00} = 36$
2. On dividing any number by 10, the quotient is obtained by removing the digit at one's place from the number. The digit at ones place is the remainder.
   For example : $328 \div 10$ = Quotient = 32, remainder = 8
   $6975 \div 10$ = Quotient = 697, remainder = 5

Exercise 6.5

Fill in the blanks :

1. $0 \div 999 =$ _____
2. $1638 \div 1 =$ _____
3. $7000 \div 10 =$ _____
4. $357 \div 1 =$ _____
5. $0 \div 540 =$ _____
6. $580 \div 10 =$ _____
7. $9000 \div 100 =$ _____
8. $0 \div 5000 =$ _____
9. $6380 \div 10 =$ _____
10. $400 \div 100 =$ _____
11. $638 \div 10$ = Quotient _____ Remainder _____
12. $8134 \div 10$ = Quotient _____ Remainder _____
13. $2089 \div 10$ = Quotient _____ Remainder _____
14. $3410 \div 10$ = Quotient _____ Remainder _____
15. $5009 \div 10$ = Quotient _____ Remainder _____

Division by 2-Digit Numbers (11-20)

[Learn Tables from Advance Table Book.]

Example 4 : Divide 6938 by 17.
Solution : 17 goes 4 times in 69.
Subtract $17 \times 4 = 68$ from 69 ($69 - 68 = 1$).
Remainder = 1 hundred = 10 tens
Bring 3 tens down, it makes $10 + 3 = 13$ tens.
17 goes 0 times in 13.
13 tens = 130 ones
Bring down 8 ones, it makes $130 + 8 = 138$ ones.
17 goes 8 times in138.
Subtract $17 \times 8 = 136$ from 138 ($138 - 136 = 2$).
Remainder = 2 Quotient = 408

```
  408
17)6938
  68
  ---
   138
   136
   ---
     2
```

Exercise 6.6

Divide (in your exercise book) :

1. 681 ÷ 13	**2.** 1805 ÷ 16	**3.** 643 ÷ 12	**4.** 936 ÷ 15
5. 6369 ÷ 17	**6.** 2949 ÷ 12	**7.** 7024 ÷ 18	**8.** 3635 ÷ 14
9. 8396 ÷ 15	**10.** 3535 ÷ 12	**11.** 7650 ÷ 19	**12.** 3172 ÷ 11
13. 4018 ÷ 16	**14.** 8816 ÷ 19	**15.** 6338 ÷ 13	**16.** 8304 ÷ 20
17. 8346 ÷ 18	**18.** 9070 ÷ 17	**19.** 5139 ÷ 14	**20.** 6010 ÷ 12

Hots Questions

Sonia is 6975 days old and Mona is 7324 days old. Find their age in weeks and months.

Sonia ⟶ Weeks _____ Months _____

Mona ⟶ Weeks _____ Months _____

Word Problems on Division

Example 5 : Akhil distributed 360 chocolates equally among 15 children. How many chocolates did each child get ?

Solution : Total number of chocolates = 360
Equally distributed among = 15 children
Number of chocolates each child got = 360 ÷ 15 = 24
Each child got 24 chocolates.

```
   24
15)360
   30↓
   60
   60
    0
```

Exercise 6.7

Do these sums in your exercise book :

1. In a rest house, 168 beds are arranged equally in 6 halls. How many beds are there in each hall ? _____
2. 5 students can sit on a bench. How many benches are needed for 635 students ? _____
3. How many packets of 6 can be made from 1642 marbles ? How many will be left over ? _____
4. For a compitition, 5625 students were arranged in 9 equal groups. How many students were in each group ? _____

5. There are 16 mangoes in a packet. How many such packets will be made from 1024 mangoes ? _____
6. 385 crayons are shared equally among 3 girls. How many each and how many crayons left over ? _____
7. Suhail bought 4112 bananas. He packed them equally in 8 boxes. Find the number of bananas in each box. _____
8. The mass of 5 containers is 2790 kilograms. Find the mass of each container. _____
9. 2865 children walked in a rally. 15 children formed a group. How many groups were formed ? _____
10. 8 story books have 1792 pages altogether. How many pages does each story book have ? _____
11. 3096 marbles are packed in 12 boxes. How many marbles are there in each box ? _____
12. A milkman sold 3340 litres of milk in 20 days. How many litres of milk did he sell in a day ? _____

Let's Recall

1. What is division ? _____
2. What is the number that is to be divided in a division sum called ? _____
3. What do you do to share things equally between two people ? _____
4. When any number is divided by one the quotient is _____
5. The remainder is always _____ than the divisor.
6. If Meheil puts exactly 2 fish in a fish bowl, then how many fish will he use to put in 20 bowls ?

   (a) 40 **(b)** 22 **(c)** 42 **(d)** 20
7. How many 5-star balloons can Rohan buy for ₹ 50, if each costs ₹ 5 ?

   (a) $50 \div 5$ **(b)** $50 - 5$ **(c)** 50×5 **(d)** $50 + 5$
8. In one trip a car can take 6 people. In how many trips can it take 30 people ?

   (a) 5 trips **(b)** 6 trips **(c)** 4 trips **(d)** 10 trips
9. There are 12 plants in a row. How many plants will there be in all in 40 such rows ?

   (a) 12×40 **(b)** $40 \div 12$ **(c)** $40 - 12$ **(d)** $40 + 12$

Chapter 7

Unit-III : Fractional Numbers

Common Fractions

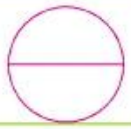
Learning Objectives :

❖ What is Fraction ? ❖ Halves, Thirds, ... Tenths of a Whole or a Collection ❖ Fractions of Collections ❖ The Terms : Numerator and Denominator ❖ Equal or Equivalent Fractions ❖ Kinds of Fractions ❖ Comparison of Fractions and Unlike Fractions ❖ Addition and Subtraction of Like Fractions ❖ Word Problems on Fractions.

➲ What is Fraction ?

Fraction represents a part of a whole or more generally, any numbers of equal parts. It is written in $\frac{A}{B}$ form and read A by B. Upper number of the line called numerator and lower part is called denominator.

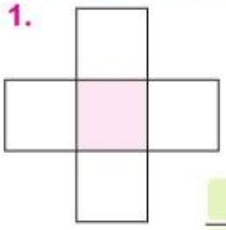
Shapes or things can be divided into two or more equal parts. When a shape is divided into two equal parts, each part is called $\frac{1}{2}$ of the whole. When a shape is divided into 3 equal parts, each part is called $\frac{1}{3}$ of the whole, and so on.

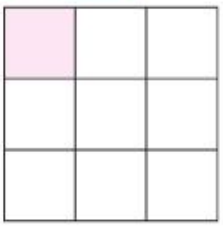
Shape	Divide into	Each part	Write as	Shape	Divide into	Each part	Write as
	—	one whole	1		6 equal parts	one-sixth	$\frac{1}{6}$
	2 equal parts	one-half	$\frac{1}{2}$		7 equal parts	one-seventh	$\frac{1}{7}$
	3 equal parts	one-third	$\frac{1}{3}$		8 equal parts	one-eighth	$\frac{1}{8}$

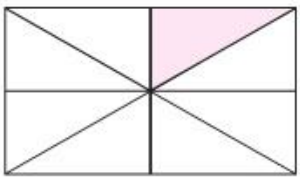
	4 equal parts	one- fourth	$\frac{1}{4}$		9 equal parts	one-ninth	$\frac{1}{9}$
	5 equal parts	one-fifth	$\frac{1}{5}$		10 equal parts	one-tenth	$\frac{1}{10}$

Exercise 7.1

☞ What fraction of each shape is shaded ?

1. 

2. 

3. 

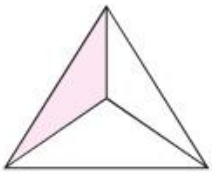
4. 

5. 

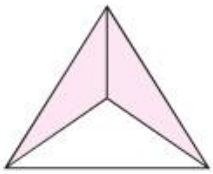
➲ Halves, Thirds, ... Tenths of a Whole or a Collection

One-third and Two-thirds

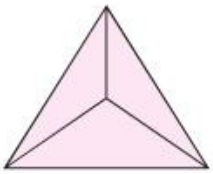
On dividing a whole into three equal parts, each of these parts is called one-third of the whole. If we take the two parts of the whole together they are called two-thirds, written as $\frac{2}{3}$. Three-thirds make a whole, written as $\frac{3}{3}$ or 1.



One-third $\frac{1}{3}$



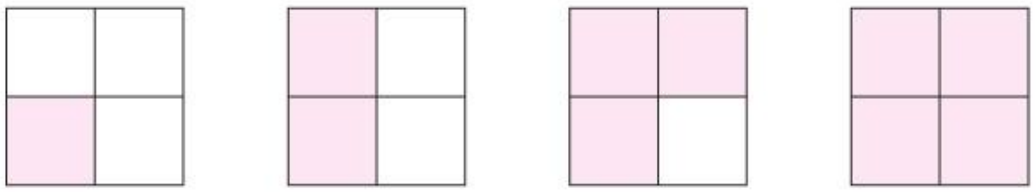
two-thirds $\frac{2}{3}$



Three-thirds or a whole $\frac{3}{3}$ or 1

One-fourth and Three-fourths

We can see $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}$, and $\frac{4}{4}$ in the following figure :

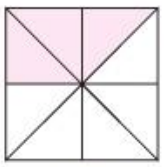


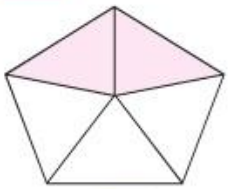
One-fourth $\frac{1}{4}$ two-fourths $\frac{2}{4}$ three-fourths $\frac{3}{4}$ four-fourths $\frac{4}{4}$ or 1

Similarly, we can shade figures $\frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{2}{7}, \frac{3}{7}$, ..., etc.

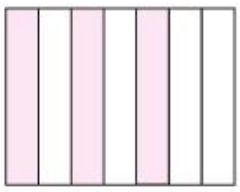
Exercise 7.2

☞ What fraction of each shape is shaded ?

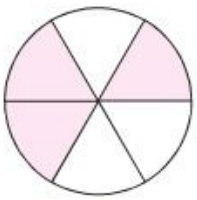
1. 

2. 

3. 

4. 

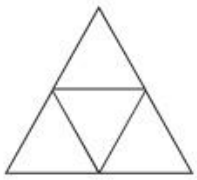
5. 

6. 

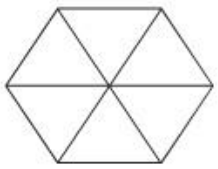
☞ Shade the given fraction :

7. 

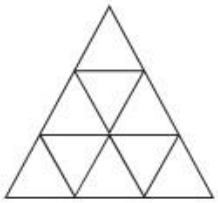
$\frac{3}{8}$

8. 

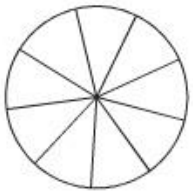
$\frac{3}{4}$

9. 

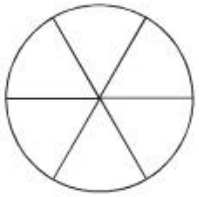
$\frac{1}{6}$

10. 

$\frac{7}{9}$

11. 

$\frac{5}{9}$

12. 

$\frac{5}{6}$

Exercise 7.3

☞ Write the fraction for each of the following :

1. one-sixth $\frac{1}{6}$

2. two-thirds $\frac{\quad}{\quad}$

3. five-sevenths $\frac{\quad}{\quad}$

4. three-fourths $\frac{\quad}{\quad}$

5. four-ninths $\frac{\quad}{\quad}$

6. three-fifths $\frac{\quad}{\quad}$

7. six-sevenths $\frac{\quad}{\quad}$

8. seven-tenths $\frac{\quad}{\quad}$

9. four-elevenths $\frac{\quad}{\quad}$

☞ Write the following fractions in words :

10. $\frac{3}{5}$

11. $\frac{3}{8}$

12. $\frac{4}{9}$

13. $\frac{9}{10}$

14. $\frac{6}{7}$

15. $\frac{5}{9}$

16. $\frac{5}{6}$

17. $\frac{7}{10}$

18. $\frac{5}{7}$

19. $\frac{6}{11}$

☞ A circle was divided into following equal parts. Some parts were taken out of them. Write their fractions :

S.No.	Number of equal parts	Parts taken	Fraction (in digits)	Fraction (in words)
20.	11	8	$\frac{8}{11}$	Eight-eleventh
21.	6	5		
22.	30	17		
23.	100	91		
24.	800	241		

➲ Fractions of Collections

Mona had 7 toffees. She gave 4 of them to her brother. What fraction of toffees did she give to her brother ?

We can divide the collection into fraction. Here Mona gave 4 parts of 7 equal parts of the collection, that is, she gave $\frac{4}{7}$ fraction of toffees to her brother.

We can work out fractions of some collections :

$\frac{1}{4}$ of 12 biscuits $= 12 \div 4$ $= 3$ biscuits

$\frac{1}{5}$ of 30 balls $= 30 \div 5$ $= 6$ balls

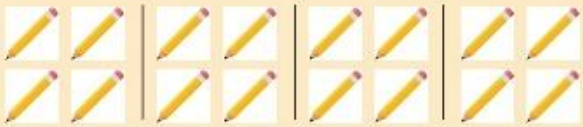
$\frac{1}{9}$ of 90 g sweets $= 90 \div 9$ $= 10$ g sweets

$\frac{1}{4}$ of 1 hour $= 60$ minutes $\div 4$ $= 15$ minutes

$\frac{1}{5}$ of 250 mL of milk $= 250 \div 5$ $= 50$ mL of milk

Example 1 : Show one fourth of each group by drawing a line :

Solution :

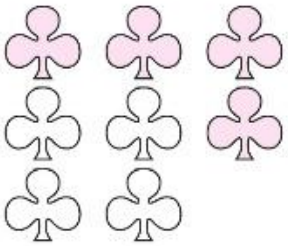


Exercise 7.4

1. Write the fraction of each collection that is shaded :

(a)

(b)



(c)

2. Fill in the blanks :

(a) $\frac{1}{7}$ of 35 toys = _____ = _____ toys

(b) $\frac{1}{9}$ of 540 g sweets = _____ = _____ g sweets

(c) $\frac{1}{2}$ of 8 birds = _____ = _____ birds

(d) $\frac{1}{5}$ of 20 oranges = _____ = _____ organges

(e) $\frac{1}{4}$ of 1 hour = _____ = _____ minutes

(f) $\frac{1}{3}$ of 150 mL milk = _____ = _____ mL milk

3. Show one-third of each group by drawing a line :

(a) 

(b) 

4. Dinesh sleeps 7 hours everyday. A day has 24 hours. What fraction of the day does he sleep ?

5. Anju bought 8 mangoes. She found 3 of them rotten. What fraction of apples was good ?

6. Roma got 33 marks out of 50 in English. What fraction of marks did she obtain ?

➲ The Terms : Numerator and Denominator

In each fraction, the numeral below the line tells us into how many equal parts each whole is divided. We call it the denominator of the fraction.

For example : 5 is the denominator in the fraction $\frac{3}{5}$.

In each fraction, the numeral above the line tells us how many of the equal parts have been taken. We call it the numerator of the fraction.

For example : 4 is the numerator in the fraction $\frac{4}{7}$.

$$\text{Fraction} = \frac{\text{Numerator}}{\text{Denominator}}$$

We read the fraction $\frac{4}{7}$ as four-seventh or four by seventh.

Exercise 7.5

☞ Fill in the blanks :

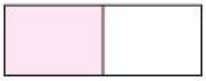
1. $\frac{3}{4}$ denominator = 4 numerator = 3
2. $\frac{2}{5}$ numerator = _____ denominator = _____
3. $\frac{7}{8}$ numerator = _____ denominator = _____
4. $\frac{6}{9}$ denominator = _____ numerator = _____
5. $\frac{2}{10}$ denominator = _____ numerator = _____
6. $\frac{5}{8}$ numerator = _____ denominator = _____

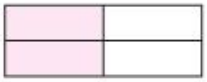
☞ Write the fraction from the given denominator and numerator :

7. numerator = 6 $\frac{6}{11}$ denominator = 11
8. denominator = 7 $\frac{\quad}{\quad}$ numerator = 4
9. denominator = 9 $\frac{\quad}{\quad}$ numerator = 5
10. numerator = 6 $\frac{\quad}{\quad}$ denominator = 8

Equal or Equivalent Fractions

If we fold a paper into two equal parts and shade one part then this shaded part is $\frac{1}{2}$ of the whole.



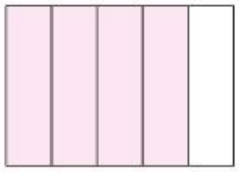


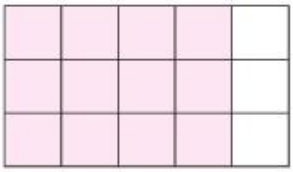
Again we fold this paper. Now the paper is divided into 4 equal parts and out of them 2 parts are shaded.

This shaded part is $\frac{2}{4}$ of the whole.

Hence, $\frac{1}{2} = \frac{2}{4}$

Similarly,



$\frac{4}{5}$ = 

$\frac{12}{15}$

To Find Equivalent Fractions

1. To find equivalent fraction, we multiply numerator and denominator of a fraction by the same number (other than zero).

   For example : to find equivalent fractions of $\frac{5}{11}$:

   $\frac{5\times2}{11\times2}=\frac{10}{22}$, $\frac{5\times3}{11\times3}=\frac{15}{33}$, $\frac{5\times4}{11\times4}=\frac{20}{44}$, $\frac{5\times5}{11\times5}=\frac{25}{55}$

2. To find equivalent fraction, we divide numerator and denominator of a fraction by the same number (other than zero).

   For example : $\frac{65}{95}=\frac{65\div5}{95\div5}=\frac{13}{19}$

Exercise 7.6

☞ Are these equivalent fractions ? Tick (✓) for yes and cross (✗) for no :

1. $\frac{1}{5},\frac{5}{5}$ ☐ **2.** $\frac{3}{5},\frac{10}{15}$ ☐ **3.** $\frac{2}{5},\frac{8}{20}$ ☐

4. $\frac{2}{10},\frac{8}{20}$ ☐ **5.** $\frac{8}{12},\frac{2}{3}$ ☐ **6.** $\frac{7}{9},\frac{14}{18}$ ☐

☞ Write the first five equivalent fractions of :

7. $\frac{3}{4}$ ☐ ☐ ☐ ☐ ☐

8. $\frac{6}{7}$ ☐ ☐ ☐ ☐ ☐

9. $\frac{5}{8}$ ☐ ☐ ☐ ☐ ☐

10. $\frac{2}{3}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$

11. $\frac{4}{5}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$

☞ Fill in the blanks :

12. $\frac{4}{4} = \frac{\square}{8}$ **13.** $\frac{8}{8} = \frac{\square}{1}$ **14.** $\frac{1}{3} = \frac{2}{\square}$

15. $\frac{5}{9} = \frac{25}{\square}$ **16.** $\frac{\square}{6} = \frac{30}{36}$ **17.** $\frac{3}{\square} = \frac{9}{21}$

18. $\frac{7}{8} = \frac{49}{\square}$ **19.** $\frac{6}{7} = \frac{24}{\square}$ **20.** $\frac{\square}{5} = \frac{16}{20}$

☞ Write the three equivalent fractions by dividing :

21. $\frac{16}{40}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ **22.** $\frac{64}{128}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$ $\frac{\square}{\square}$

➲ Kinds of Fractions

Fractions that have same denominators are called like fractions.

For example : $\frac{2}{7}, \frac{3}{7}$ and $\frac{4}{7}$ are like fractions.

Fractions that have different denominators are called unlike fractions.

For example : $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}$ are unlike fractions.

➲ Comparison of Fractions

When denominator is same :

- Fraction with greater numerator is greater.
- Fraction with smaller numerator is smaller.

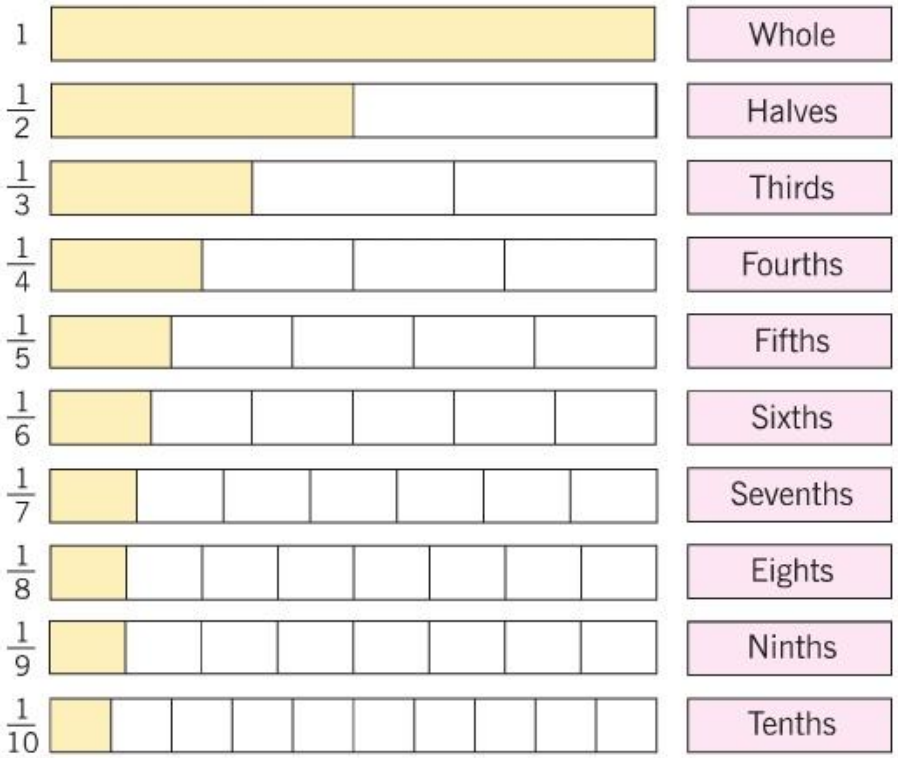
That is, $\frac{6}{7} > \frac{5}{7} > \frac{4}{7}$ (descending order)

or $\frac{4}{7} < \frac{5}{7} < \frac{6}{7}$ (ascending order)

Similarly, $\frac{7}{8} > \frac{6}{8} > \frac{5}{8} > \frac{4}{8} > \frac{3}{8} > \frac{2}{8} > \frac{1}{8}$

➲ Comparison of Unlike Fractions

Look at the following strips :



When numerator is same :

- Fraction with smaller denominator is greater.
- Fraction with greater denominator is smaller.

These are 10 similar strips divided into different equal parts. We see that the size of each equal part decreases with the increasing number of parts.

Thus, $1 > \frac{1}{2} > \frac{1}{3} > \frac{1}{4} > \frac{1}{5} > \frac{1}{6} > \frac{1}{7} > \frac{1}{8} > \frac{1}{9} > \frac{1}{10}$ (descending order)

or $\frac{1}{10} < \frac{1}{9} < \frac{1}{8} < \frac{1}{7} < \frac{1}{6} < \frac{1}{5} < \frac{1}{4} < \frac{1}{3} < \frac{1}{2} < 1$ (ascending order)

Similarly, $\frac{2}{3} > \frac{2}{4} > \frac{2}{5} > \frac{2}{6} > \frac{2}{7}$

Exercise 7.7

☞ Encircle the greatest fraction in each group :

1. $\frac{7}{13}, \frac{10}{13}, \frac{9}{13}$
2. $\frac{1}{7}, \frac{1}{9}, \frac{1}{3}$
3. $\frac{4}{5}, \frac{3}{5}, \frac{2}{5}$
4. $\frac{7}{27}, \frac{11}{27}, \frac{19}{27}$
5. $\frac{10}{23}, \frac{10}{21}, \frac{10}{17}$
6. $\frac{5}{7}, \frac{5}{9}, \frac{5}{11}$

☞ Encircle the smallest fraction in each group :

7. $\frac{5}{11}, \frac{5}{12}, \frac{5}{9}$
8. $\frac{6}{11}, \frac{9}{11}, \frac{4}{11}$
9. $\frac{2}{3}, \frac{2}{5}, \frac{2}{7}$
10. $\frac{19}{41}, \frac{14}{41}, \frac{15}{41}$
11. $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$
12. $\frac{5}{13}, \frac{9}{13}, \frac{11}{13}$

☞ Put > or < sign in between each pair of fractions :

13. $\frac{2}{9} \square \frac{8}{9}$
14. $\frac{5}{7} \square \frac{3}{7}$
15. $\frac{2}{6} \square \frac{5}{6}$
16. $\frac{1}{7} \square \frac{1}{3}$
17. $\frac{6}{11} \square \frac{5}{11}$
18. $\frac{5}{8} \square \frac{3}{8}$
19. $\frac{5}{11} \square \frac{5}{13}$
20. $\frac{4}{8} \square \frac{4}{5}$
21. $\frac{3}{5} \square \frac{3}{7}$

☞ Write the following fractions in descending order :

22. $\frac{10}{11}, \frac{10}{19}, \frac{10}{21}, \frac{10}{17}$ ____ ____ ____ ____
23. $\frac{7}{15}, \frac{8}{15}, \frac{13}{15}, \frac{11}{15}$ ____ ____ ____ ____

☞ Write the following fractions in ascending order :

24. $\frac{5}{11}, \frac{9}{11}, \frac{3}{11}, \frac{6}{11}$ ____ ____ ____ ____
25. $\frac{3}{5}, \frac{3}{7}, \frac{3}{10}, \frac{3}{8}$ ____ ____ ____ ____

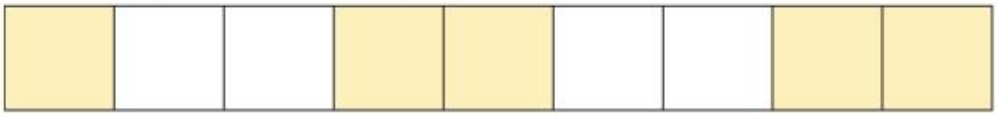
26. Komal read $\frac{9}{13}$ part of a book in one hour and Savita read $\frac{7}{13}$ part of the same book in one hour. Who read more ?

27. Swati ate $\frac{1}{3}$ part of an apple. Reema ate $\frac{1}{4}$ part of an apple. Who ate more ?

Addition and Subtraction of Like Fractions

Addition of Like Fractions

There is a strip divided into 9 equal parts.



1 part is shaded on one side, 2 parts are shaded in middle and 2 parts are shaded on other side. We have 5 shaded parts in all.

Thus, $\frac{1}{9}+\frac{2}{9}+\frac{2}{9}=\frac{5}{9}$

We know that the sum of two or more fractions having the same denominators (like fraction) is

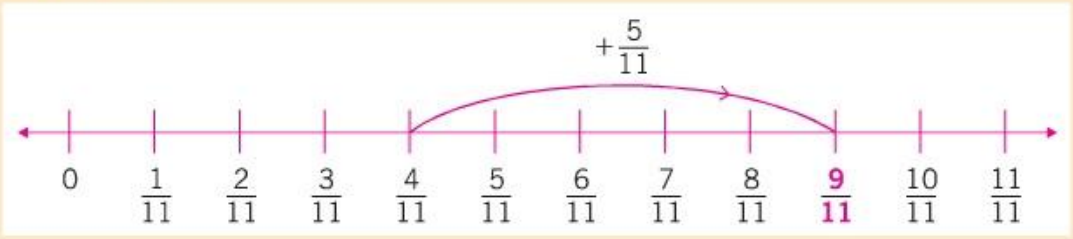
$$=\frac{\text{Sum of the Numerators}}{\text{Denominator}}$$

Thus, $\frac{1}{9}+\frac{2}{9}+\frac{2}{9}=\frac{1+2+2}{9}=\frac{5}{9}$

Addition of Like Fractions on the Number Line

Example 2 : Add $\frac{4}{11}$ and $\frac{5}{11}$ on the number line.

Solution :



$$\frac{4}{11}+\frac{5}{11}=\frac{5+4}{11}=\frac{9}{11}$$

Exercise 7.8

☞ Fill in the blanks :

1. $\frac{3}{5}+\frac{1}{5}=\frac{\square+\square}{5}=\frac{\square}{5}$

2. $\frac{5}{13}+\frac{7}{13}=\frac{\square+\square}{13}=\frac{\square}{13}$

3. $\frac{3}{9}+\frac{4}{9}=\frac{\square+\square}{9}=\frac{\square}{9}$

4. $\frac{3}{7}+\frac{2}{7}=\frac{\square+\square}{7}=\frac{\square}{7}$

5. $\frac{25}{38}+\frac{7}{38}=\frac{\square}{\square}$

6. $\frac{5}{11}+\frac{3}{11}=\frac{\square}{\square}$

7. $\frac{3}{17}+\frac{5}{17}=\frac{\square}{\square}$

8. $\frac{2}{19}+\frac{4}{19}+\frac{7}{19}=\frac{\square}{\square}$

9. $\frac{5}{9}+\frac{1}{9}+\frac{2}{9}=\frac{\square}{\square}$

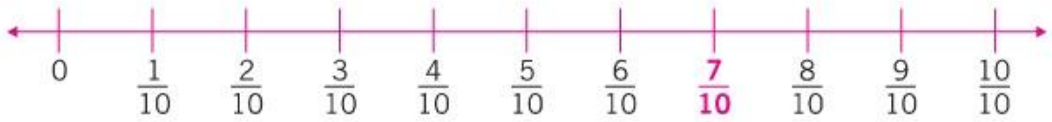
10. $\frac{11}{36}+\frac{17}{36}+\frac{5}{36}=\frac{\square}{\square}$

11. $\frac{9}{22}+\frac{7}{22}+\frac{3}{22}=\frac{\square}{\square}$

12. $\frac{10}{23}+\frac{7}{23}+\frac{4}{23}=\frac{\square}{\square}$

13. Add on the number line :

$$\frac{3}{10}+\frac{4}{10}=\frac{\square}{\square}$$



Subtraction of Like Fractions

On subtracting like fractions, we subtract only the numerators, the denominator remains the same.

Example 3 : Subtract $\frac{7}{13}$ from $\frac{12}{13}$.

Solution : $\frac{12}{13}-\frac{7}{13}=\frac{12-7}{13}=\frac{5}{13}$

Example 4 : There was $\frac{24}{29}$ litre of milk in Bhavana's house. She consumed $\frac{12}{29}$ litre of milk. How much milk is left ?

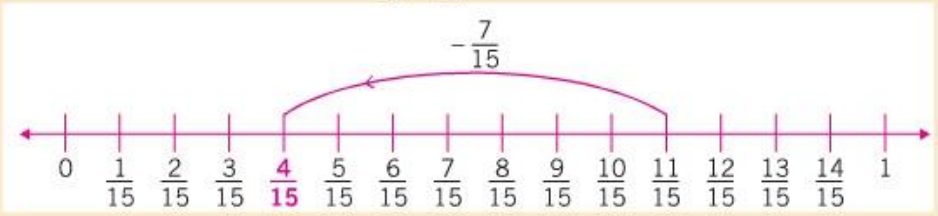
Solution : Bhavana had milk $= \frac{24}{29}$ litre

She consumed $= \frac{12}{29}$ litre

Milk left $= \frac{24}{29} - \frac{12}{29} = \frac{24-12}{29} = \frac{12}{29}$ litre

Example 5 : Subtract on the number line : $\frac{11}{15} - \frac{7}{15}$

Solution :



$$\frac{11}{15} - \frac{7}{15} = \frac{4}{15}$$

Exercise 7.9

☞ Fill in the blanks :

1. $\frac{14}{19} - \frac{6}{19} = \frac{14-6}{\square} = \frac{\square}{19}$

2. $\frac{9}{16} - \frac{6}{16} = \frac{\square - 6}{16} = \frac{3}{\square}$

3. $\frac{9}{11} - \frac{5}{11} = \frac{\square - \square}{11} = \frac{\square}{11}$

4. $\frac{4}{7} - \frac{2}{7} = \frac{\square - \square}{7} = \frac{\square}{7}$

☞ Find the difference :

5. $\frac{13}{21} - \frac{9}{21} = \frac{\square}{\square}$

6. $\frac{6}{11} - \frac{3}{11} = \frac{\square}{\square}$

7. $\frac{7}{10} - \frac{3}{10} = \frac{\square}{\square}$

8. $\frac{29}{31} - \frac{17}{31} = \frac{\square}{\square}$

9. $\frac{59}{100} - \frac{27}{100} = \frac{\square}{\square}$

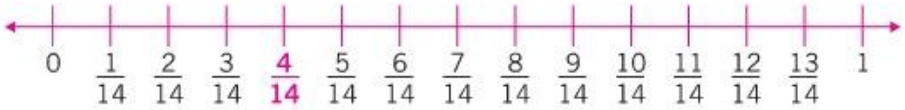
10. $\frac{20}{28} - \frac{15}{28} = \frac{\square}{\square}$

11. What should be subtracted from $\frac{33}{35}$ to get $\frac{26}{35}$?

12. What should be added to $\frac{13}{20}$ to get $\frac{19}{20}$?

13. Subtract on the number line :

$$\frac{9}{14} - \frac{5}{14} = \frac{\square}{\square}$$



Word Problems on Fractions

How much does each pay the fruitseller ?

	(₹ 120 per kg)	(₹ 60 per kg)	(₹ 24 per kg)	Total Amount
 buys	$\frac{1}{4}$ kg; ₹ _____	$\frac{1}{3}$ kg; ₹ _____	$\frac{1}{2}$ kg; ₹ _____	₹ _____
 buys	$\frac{1}{3}$ kg; ₹ _____	$\frac{1}{2}$ kg; ₹ _____	$\frac{1}{4}$ kg; ₹ _____	₹ _____
 buys	$\frac{1}{2}$ kg; ₹ _____	$\frac{1}{4}$ kg; ₹ _____	$\frac{1}{3}$ kg; ₹ _____	₹ _____

Exercise 7.10

Do these sums in your exercise book :

1. An ant moves $\frac{7}{16}$ metre in the first minute and $\frac{5}{16}$ metre in the second minute. How much distance did it move in all ? _____
2. Shyam read $\frac{5}{16}$, $\frac{7}{16}$ and $\frac{3}{16}$ parts of a book in three hours. What portion of the book did he read in these hours ? _____
3. Mona knit $\frac{3}{10}$, $\frac{4}{10}$ and $\frac{2}{10}$ parts of a sweater in three days. Find the total fraction of the sweater, she knit in these three days. _____
4. Tina ran $\frac{5}{8}$ kilometre in one hour and Anshu ran $\frac{3}{8}$ kilometres in one hour. Who ran more and how much more ? _____
5. Ansh spent $\frac{4}{9}$ of his money on sweets and $\frac{1}{9}$ of it on fruits. What part of his money did he spend ? _____

6. Pari read $\frac{11}{15}$ part of a book in one hour and Shiva read $\frac{13}{15}$ part of the same book in one hour. Who read more and how much more ? _____

7. A man gave $\frac{5}{8}$ part of his property to his daughter and $\frac{3}{8}$ part to his son. Who got more property and how much more ? _____

Let's Recall

1. What are the total parts of a fraction called ? _____
2. $\frac{1}{2}$ of a figure has to have two equal parts. Yes/No
3. How many fourths make a whole ? _____
4. Tick (✓) the equivalent fraction.

   (a) $\frac{2}{6} = \frac{1}{3}$ ☐, $\frac{1}{2}$ ☐, $\frac{1}{4}$ ☐ **(b)** $\frac{1}{4} = \frac{3}{8}$ ☐, $\frac{2}{8}$ ☐, $\frac{5}{8}$ ☐

   (c) $\frac{1}{5} = \frac{2}{5}$ ☐, $\frac{3}{15}$ ☐, $\frac{4}{5}$ ☐

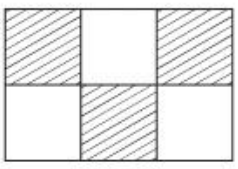
5. How many halves make a whole ? _____
6. In the fraction $\frac{4}{5}$, 4 is the _____ .
7. What must be added to the fraction $\frac{2}{7}$ to make it a whole ?

   (a) $\frac{3}{7}$ ☐ **(b)** $\frac{5}{7}$ ☐ **(c)** $\frac{1}{7}$ ☐ **(d)** None of these ☐

8. Sona shades 3 spaces on a game board. What fraction of the game board is shaded ?

   (a) $\frac{3}{6}$ ☐ **(b)** $\frac{3}{5}$ ☐

   (c) $\frac{3}{3}$ ☐ **(d)** $\frac{6}{3}$ ☐



9. The fraction of unshaded part is 

   (a) $\frac{2}{3}$ ☐ **(b)** $\frac{1}{3}$ ☐ **(c)** $\frac{1}{2}$ ☐ **(d)** $\frac{3}{2}$ ☐

Chapter 8

Unit-IV: Currency

Indian Currency

Learning Objectives :

❖ What is Currency ? ❖ Indian Currency ❖ Conversion of Rupees into Paise ❖ Conversion of Paise into Rupees ❖ Addition of Rupees and Paise ❖ Word Problems on Addition of Money ❖ Subtraction in Rupees and Paise ❖ Word Problems on Subtraction of Money ❖ Multiplication of Money by 1-Digit Number ❖ Division of Money by 1-Digit Number.

What is Currency ?

Currency is a generally accepted form of money, including coins and paper notes, which is a government and circulated within an economy used as a medium of exchange for goods and services. Currency is the basic for trade.

Indian Currency

Indian currency is in rupee and paise. We use the symbol '₹' for rupees and '*p*' for paise.

When the amount has rupees and paise both, we separate them by putting a dot in between them *e.g.*, we write rupees thirteen and paise forty five as ₹ 13.45. As a convention we do not write '*P*'.

The numeral to the right of the dot is paise and to the left rupees. Paise are always written in two digits. *e.g.*, rupees five and nine paise are written as : ₹ 5.09.

Some amounts are expressed below in words and figures :

Amount	Amount in Words	Amount in Figures
25 rupees 6 paise	Rupees twenty five and paise six	₹ 25.06
60 rupees	Rupees sixty	₹ 60.00
40 paise	paise forty	₹ 0.40
1 paisa	paisa one	₹ 0.01

It is clear that 0 on the left of the dot (.) shows that there is no rupee.

Conversion of Rupees into Paise

For converting 'rupees' into 'paise', we remove the symbol '₹' and the dot (.). Thus, we get the number of paise.

Example 1 : Convert 29 rupees 45 paise into paise.
Solution : 29 rupees 45 paise = ₹ 29.45
= 2945 paise

Conversion of Paise into Rupees

For converting 'paise' into 'rupees and paise', we put a dot (.) after 2 digits from the right of the given number of paise.

Common Mistake

Do not put a 'p' after the dot.
₹ 7.66 p ✗ ₹ 7.66 ✓

Example 2 : Convert 4175 paise into 'rupees and paise'.
Solution : 4175 paise = ₹ 41.75 = 41 rupees 75 paise
Example 3 : Convert 7500 paise into 'rupees and paise'.
Solution : 7500 paise = ₹ 75.00 = 75 rupees

Exercise 8.1

Common Mistake

4 rupees 7 paise = 4.7 ×
4.07 ✓

☞ Write the following amounts of money in figures :

1. 4 rupees 5 paise = _____
2. 9 paise = _____
3. 9 rupees 90 paise = _____
4. 10 paise = _____
5. 9 rupees 75 paise = _____
6. 14 rupees = _____

☞ Convert each into paise :

7. 16 rupees 25 paise = _____ paise
8. ₹ 90.09 = _____ paise
9. 28 rupees = _____ paise

☞ Convert into 'rupees and paise' :

10. 800 paise = _____ rupees _____ paise
11. 177 paise = _____ rupees _____ paise
12. 1075 paise = _____ rupees _____ paise
13. 2740 paise = _____ rupees _____ paise
14. 4308 paise = _____ rupees _____ paise
15. 4800 paise = _____ rupees _____ paise

Addition of Rupees and Paise

Addition of Rupees and Paise are same as simple addition.

Example 4 : Add ₹ 83.65 and ₹ 56.75.

Solution : First write rupees and paise in separate columns. Add in the same way as we add numbers. Because 10 tens of paise = 1 rupee, so add 'carry' of tens of paise to ones of rupees.

Sum = ₹ 140.40

	₹	P
	1 1	1
	8 3	6 5
+	5 6	7 5
	1 4 0	4 0

Exercise 8.2

Add :

1.

	₹	P
	26	30
+	10	85

2.

	₹	P
	37	65
+	9	09

3.

	₹	P
	19	00
+	10	27

4.

	₹	P
	647	58
+	543	50

5.

	₹	P
	18	75
+	496	45

6.

	₹	P
	35	87
+	289	95

7.

	₹	P
	325	45
	85	80
+	8	50

8.

	₹	P
	465	80
	12	05
+	218	65

9.

	₹	P
	211	56
	764	97
+	4	85

Word Problems on Addition of Money

Example 5 : Priya purchased a Kurti for ₹ 296.75 and a legy for ₹ 155.65. How many rupees in all did she pay ?

Solution : Price of the kurti = ₹ 296.75
Price of the legy = ₹ 155.65
Total price = ₹ 452.40

	₹	P
	1 1 1	1
	2 9 6	7 5
+	1 5 5	6 5
	4 5 2	4 0

Fact File

Shopkeepers prepare bills of the total amount, we have to pay them for the things we have purchased.

Note

⊙ *Put the amounts one above the other so that the dots come in one column.*

Exercise 8.3

☞ Do the following sums in your exercise book :

1. Saif purchased some mangoes for ₹ 39.75 and some bananas for ₹ 97.50. How much money did he pay in all ?
2. Ravi bought his friend Mehul, a birthday present costing ₹ 27.50 and a card costing ₹ 3.75. How much money did he spend ?
3. Neha bought a slab of biscuits for ₹ 12.50, chocolate for ₹ 6.50 and toffee for ₹ 4.20. How much money did she pay in all ?
4. Devid purchased rice for ₹ 325.25 and wheat for ₹ 85.75. The cartpuller charged ₹ 8.50 to carry them to his house. How much money did he spend in all ?
5. Manu bought a chair for ₹ 1272.75, a table for ₹ 2170.50 and an almirah for ₹ 4507.75 How many rupees did she spend ?
6. John paid ₹ 203.50, ₹ 205.25 and ₹ 202.75 for Mobile bill for three months. What is the total amount paid ?

➲ Subtraction in Rupees and Paise

Example 6 : Subtract ₹ 198.25 from ₹ 302.13.

Solution : Subtract in the same way as we subtract numbers.

Borrow 1 rupee which is equal to 10 tens of paise.

Difference = ₹ 103.88

₹	P
2 9 11	10 13
3 0 2	1 3
− 1 9 8	2 5
1 0 3	8 8

Exercise 8.4

☞ Subtract :

1.

₹	P
2 0	3 5
− 1 4	5 0

2.

₹	P
6	3 0
− 3	7 5

3.

₹	P
1 9	2 5
− 7	5 0

4.

₹	P
30	00
−21	75

5.

₹	P
10	00
−5	25

6.

₹	P
20	00
−14	50

7.

₹	P
100	00
−93	75

8.

₹	P
642	73
−99	98

9.

₹	P
347	50
−258	75

10.

₹	P
475	00
−348	35

11.

₹	P
152	90
−18	95

12.

₹	P
376	25
−229	35

Exercise 8.5

☞ Do the following sums in your exercise book :

Add :

1. ₹ 125.08, ₹ 136.80 and ₹ 75.88
2. ₹ 55.25, ₹ 14.75 and ₹ 25.50
3. ₹ 13.85, ₹ 12.70 and ₹ 24.05
4. ₹ 16.75, ₹ 2.55 and ₹ 10.95
5. ₹ 22.05, ₹ 16.80 and ₹ 3.75
6. ₹ 12.45, ₹ 12.85 and ₹ 13.60
7. ₹ 90.65, ₹ 33.10 and ₹ 6.35
8. ₹ 19.35, ₹ 140.40 and ₹ 27.75
9. ₹ 124.25, ₹ 70.30 and ₹ 102.05

☞ Subtract

10. ₹ 64.50 from ₹ 70.00
11. ₹ 84.75 from ₹ 110.40
12. ₹ 380.85 from ₹ 475.50
13. ₹ 51.00 – ₹ 33.75
14. ₹ 175.50 – ₹ 80.85
15. ₹ 344.65 – ₹ 275.80

16. ₹ 50.00 – ₹ 8.05 17. ₹ 76.50 – ₹ 48.75

18. ₹ 275.20 – ₹ 188.75

Life Skills

Visit a shop and ask to see the following items. Note down their MRP (Maximum Retail Price).

1. a 
2. 1 litre 
3. a packet of 
4. a loaf of 
5. a cake of 
6. a pen 

Word Problems on Subtraction of Money

Example 7 : Suhani had ₹ 925.25 in her bank account. She withdrew ₹ 217.65 on Monday and ₹ 365.65 on Friday. How much money was left in her account ?

Solution :

On Monday, Suhani withdrew = ₹ 217.65
On Friday, Suhani withdrew = ₹ 365.65
Total money Suhani withdrew = ₹ 583.30
Total money in Suhani's account = ₹ 925.25
Money left in Suhani's account = ₹ 341.95

₹ 217 · 65	
+ ₹ 365 · 65	
₹ 583 · 30	
₹ 925 · 25	
– ₹ 583 · 30	
₹ 341 · 95	

Exercise 8.6

Do the following sums in your exercise book :

1. The price of a pencil is ₹ 7.50 and of a ballpen is ₹ 9.25. Which one is more costly and by how much ?
2. Shikhar bought stamps for ₹ 6.25 from the post-office. He gave a 10-rupee note. How much money will he get back ?
3. Pari purchased storybook for ₹ 62.75 and notebook for ₹ 33.50. She gave a 100-rupee note. How much money would the shopkeeper return ?
4. Rahul had ₹ 180.00. He lent ₹ 94.50 to Lovy. How much money is left with Rahul ?
5. Kanak purchased a saree for ₹ 344.75. She gave a 500-rupee note to the shopkeeper. What will she get back ?
6. Renu bought a raincoat for ₹ 143.25 and an umbrella for ₹ 85.75. She gave the shopkeeper 3 notes of one-hundred each. What did she get back ?

7. Pari bought a toffee for ₹ 6.75, chocolate for ₹ 13.75. She gave the shopkeeper a 50-rupee note. How much money did she get back ?
8. Rishi bought biscuits for ₹ 6.50, chips for ₹ 8.75 and buns for ₹ 11.25. How much did he spend in all ?
9. Jai has ₹ 125.50 in his bank account. How much money should he deposit to make it ₹ 160.00 ?
10. Renu purchased a *chunni* for ₹ 55.75. She gave the salesman six 10-rupee notes. How much change did she get back ?
11. Rahul deposited ₹ 310.50 in his bank on Monday and ₹ 125.75 on Tuesday. On Friday he withdrew ₹ 284.50. How many rupees are there in his account now ?

Multiplication of Money by 1-Digit Number

Example 8 : Multiply ₹ 8.96 by 7.

Solution : Multiply in the same way as we multiply whole numbers.
Always multiply from right to left.
10 tens of paise = 1 rupee
So we add 'carry' of tens of paise to ones of rupees.
Product = ₹ 62.72

₹	P
8.	96
	× 7
62.	72

Example 9 : One sticker costs 75 P. How much will 5 stickers cost ?

Solution : Cost of 5 sticker = 75 × 5 P = 375 P
= ₹ 3.75

Example 10 : A toffee costs ₹ 12.35. How much must Charu spend to buy 7 tofees ?

Solution : Cost of 1 toffee = ₹ 12.35
Cost of 7 toffees = ₹ 12.35 × 7
= ₹ 86.45

₹	P
12.	35
	× 7
86.	45

Exercise 8.7

Do the following sums in your exercise book :

Multiply :

1. ₹ 9.55 by 7
2. ₹ 12.05 by 6
3. ₹ 4.35 by 10
4. ₹ 7.25 by 6
5. ₹ 5.15 by 4
6. ₹ 8.90 by 8
7. ₹ 59.15 by 9
8. ₹ 41.60 by 7
9. ₹ 76.90 by 3
10. ₹ 0.30 by 10
11. ₹ 16.45 by 5
12. ₹ 41.30 by 8
13. ₹ 65.05 × 6
14. ₹ 29.85 × 4
15. ₹ 229.65 × 8
16. ₹ 18.85 × 7
17. ₹ 26.39 × 9
18. ₹ 14.25 × 5

19. A greeting cards costs ₹ 7.75. Find the cost of 8 such greeting cards.

20. An eraser costs ₹ 2.50. What is the cost of 10 erasers ?

21. A mango drink pack costs ₹ 10.25. How much will 10 packs cost ?

22. The cost of a clock is ₹ 244.75. Find the cost of 8 such clocks.

23. A bottle of milk costs ₹ 7.50. What will be the cost of 7 such bottles ?

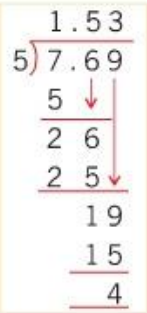
24. An umbrella costs ₹ 64.25. What is the cost of 4 such umbrellas ?

25. Kishore, Soni and Monu went to watch a circus. Each ticket costs ₹ 125.50. How much money do they require to buy their tickets ?

Division of Money by 1-Digit Number

Example 11 : Divide ₹ 7.69 by 5.

Solution : Divide money in the same way as we divide always.
Divide from left to right. Put a dot in the quotient just before bringing paise down.
Quotient = ₹ 1.53
Remainder = 4 P or ₹ 0.04



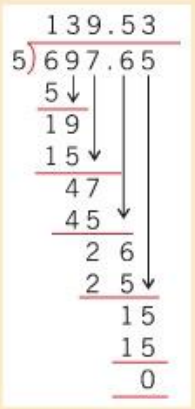
Example 12 : 5 metre cloth costs ₹ 697.65. What is the cost of 1 metre cloth ?

Solution : Cost of 5 metre clothes = ₹ 697.65

Then, cost of 1 metre clothe $= \frac{₹\,697.65}{5}$

$= ₹\,139.53$

Cost of 1 metre cloth = ₹ 139.53



Exercise 8.8

Do the following sums in your exercise book :

Divide :

1. ₹ 83.40 ÷ 3 **2.** ₹ 13.65 ÷ 5 **3.** ₹ 8.40 ÷ 8

4. ₹ 20.45 ÷ 5
5. ₹ 39.06 ÷ 7
6. ₹ 55.00 ÷ 10
7. ₹ 82.80 ÷ 9
8. ₹ 73.20 ÷ 6
9. ₹ 19.00 ÷ 4
10. ₹ 62.80 ÷ 8
11. ₹ 225.72 ÷ 6
12. ₹ 59.75 ÷ 5
13. ₹ 73.60 ÷ 8
14. ₹ 281.92 ÷ 8
15. ₹ 13.65 ÷ 7

☞ Find the quotient and remainder :

16. ₹ 1252.24 ÷ 5
17. ₹ 470.80 ÷ 6
18. ₹ 50.50 ÷ 8
19. ₹ 64.46 ÷ 7
20. ₹ 178.20 ÷ 9
21. ₹ 64.75 ÷ 9
22. 4 children share ₹ 335.00 equally. How much will each child receive ?

23. The cost of 6 pens is ₹ 337.50. Find the cost of 1 pen.
24. 4 chocolates cost ₹ 27.00. How much does 1 chocolate cost
25. If a set of 8 glass spoons ₹ 37.60, then how much does each spoons cost ?

26. 5 chairs cost ₹ 1283.20. Find the cost of 1 chair.
27. Mona bought 4 apples and gave a 100-rupee note to the vendor. The vendor returned her ₹ 27.00. Find the cost of 1 apple.
28. If 5 fruit bathing soap cost ₹ 37.50, then how much does 1 soap cost ?

29. 9 vests cost ₹ 473.40. What is the cost of 1 vest ?
30. 8 stools cost ₹ 1252.00. What is the cost of 1 stool ?

Let's Recall

1. What are the symbols for rupees and paise ?
2. How many digits are there in paise ?
3. 10 coins of ₹ 10, make ₹ 100. Yes/No
4. The both sides of any coin are same. Yes/No
5. How many rupees are there in 400 paise ?
6. The conversion of 1205 paise into ₹ is :

   (a) ₹ 1.205 **(b)** ₹ 120.5 **(c)** ₹ 12.05 **(d)** ₹ 12.50
7. Swami wanted to distribute ₹ 120 among four children. The amount received by each child is :

   (a) ₹ 30 **(b)** ₹ 50 **(c)** ₹ 20 **(d)** ₹ 40
8. 2 rupees equals _____ .

   (a) four 50-paise **(b)** five 25-paise
   (c) ten 50-paise **(d)** nine 25-paise
9. How many 50 paise coins will make ₹ 17.50 ?

   (a) 18 **(b)** 33 **(c)** 35 **(d)** 37

Chapter 9

Unit-V : Measurement of Time

Clock and Calendar

Learning Objectives :

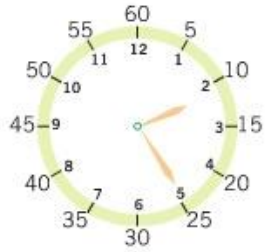
- What is Clock ?
- Reading Time
- Word Problems on Time
- Ante-meridiem and Post-meridiem (am and pm)
- Year, Month and Day
- Reading a Calendar.

What is Clock ?

A clock is an instrument used to measure, keep and indicate time. The clock is one of the oldest human inventions, meeting the need to measure intervals of time shorter than the natural units—the day, the lunar month and the year.

Reading Time

The face of a clock is divided into 12 equal units. Each unit is further divided into 5 equal units called minutes.

(a) 

(b) 

The small hand moves 1 big unit in one hour. The long hand moves 1 small unit in one minute.

Thus, 1 hour = $12 \times 5 = 60$ minutes

The long hand is at 5 in clock (a) so minutes = $5 \times 5 = 25$

Time in the clock (a) is 2 : 25

Minute hand in the clock (b) has crossed the digit 8 and has moved 3 minutes more.

Total number of minutes = $8 \times 5 + 3 = 40 + 3 = 43$

Time in the clock (b) is 4 : 43

Example 1 : How many minutes will have passed when the minute hand moves from :

(a) 12 to 9 **(b)** 6 to 12 **(c)** 9 to 12

(d) 12 to 3 (e) 12 to 6 (f) 3 to 6

Solution : **(a)** $9 \times 5 = 45$ minutes **(b)** $6 \times 5 = 30$ minutes
(c) $3 \times 5 = 15$ minutes **(d)** $3 \times 5 = 15$ minutes
(e) $6 \times 5 = 30$ minutes **(f)** $3 \times 5 = 15$ minutes

Exercise 9.1

☞ What time does the clock show ? Write in the box :

1. 

2. 

3. 

4. 

5. 

6. 

☞ Draw the needles to show the given time :

1. 4:37

2. 8:54

3. 1:22

Past The Hour

Here the minute hand is pointing to 3.
This means that $3 \times 5 = 15$ minutes have passed since 6 o'clock.
We write the time as 6 : 15
We read the time as 15 minutes past 6
or conventionally quarter past 6
(Since 15 minutes = $60 \div 4$ = quarter hour)

Here the minute hand is pointing to 6.
This means that $6 \times 5 = 30$ minutes have passed since 2 o'clock.
We write the time as 2 : 30

We read the time as 30 minutes past 2.
or conventionally, half past 2
(Since 30 minutes = 60 ÷ 2 = half an hour)

To The Hour

Here the minute hand is pointing to 10.

This means that 10 × 5 = 50 minutes have past since 4 o'clock.
We write the time as 4 : 50
We read the time as 50 minutes past 4.
We also read it as 10 minutes to 5 because it will be 5 o'clock, when the minute hand further moves 10 small divisions.

Conventionally, after 'half past the hour', we read the time in 'to the hour'.
Here the minute hand is pointing to 9.

This means that 9 × 5 = 45 minutes have passed since 6 o'clock.
We write the time as 6 : 45
We read the time as 45 minutes past 6.
or conventionally 15 minutes to 7 or quarter to 7

Exercise 9.2

☞ Fill in the boxes after reading the time :

1. 

25 minutes past 11

2. 

__ minutes past __

3. 

__ minutes past __

4. 

__ minutes past __

5. 

__ minutes past __

6. 

__ minutes past __

7. 

minutes past

8. 

minutes past

9. 

minutes past

10. 

minutes past

11. 

minutes past

12. 

minutes past

Exercise 9.3

☞ Write the time in the boxes in numbers and words (in the conventional manner) :

1. 

6 : 25
25 minutes past 6

2. 

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10. 

11. 

12. 

Hots Questions

Vincent reached home from work at 5 in the evening. He had fever. He had a sandwich and a cup of tea and went to sleep at 6 o'clock. He woke up fresh the next morning at 5 o'clock. How many hours did Vincent sleep ?

Exercise 9.4

☞ Draw the hour hand and the minute hand to show the time given :

1. 

12 minutes past 8

2. 

half past 7

3. 

quarter to 5

4. 

9 o'clock

5. 

42 minutes past 5

6. 

quarter past 11

☞ Fill in the blanks :

Read as	Written as	Read as	Written as
23 minutes to 3	_____	quarter to 11	_____
_____	8 : 15	_____	6 : 45
_____	4 : 30	_____	4 : 43
10 minutes past 7	7 : 10	30 minutes past 2	_____
half past 9	_____	35 minutes past 4	_____

Word Problems on Time

Example 2 : The departure time of a train is 8 : 25 o'clock. Today it departed at 9 : 15 o'clock. How much late did the train depart ?

Solution : The minute hand will reach 9 o'clock (the 60 minutes division) in 60 – 25 = 35 minutes.

9 o'clock to 9 : 15 = 15 minutes

The train is late by 35 + 15 = 50 minutes

Example 3 : Mona's school starts at 7 : 40 o'clock. Today Mona reached the school 35 minutes late. At what time did Mona reach the school ?

Solution : 7 : 40 = 7 hours 40 minutes + 35 minutes

= 7 hours 75 minutes

= 7 hours 60 minutes + 15 minutes

= 8 hours 15 minutes = 8 : 15

Mona reached the school at 8 : 15.

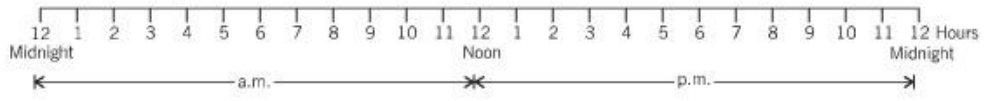
Exercise 9.5

1. News on TV starts at 8 : 40 in the night. The news lasts for 20 minutes. When does the news end ?
2. A car takes 1 hour 45 minutes to travel from Meerut to Delhi. If the car starts at quarter past 8 from Meerut, when will it reach Delhi ?
3. Mona went to watch a movie. The movie starts at half past 3. If it lasted for 2 hours 30 minutes, when will the movie end ?
4. The school goes off at 2 : 20 o'clock. Now it is 1 : 35 o'clock. How much time will it take to go off ?
5. It is 25 minutes past 9 now. How much time will it take up to 10 o'clock ?
6. Roma gets up at quarter to 6 in the morning. She takes 45 minutes to get ready for the school. At what time is she ready for the school ?

Ante-meridiem and Post-meridiem (am and pm)

The time from one mid-night to the next mid-night is called one day. The hour hand goes twice round the dial in one day. Thus it shows the same time twice in a day.

To avoid confusion, the time from 12 o'clock mid-might to 12 o'clock noon is written with letters am. The time from 12 o'clock noon to 12 o'clock mid-night is written with letters pm.



In day time, am stands for before the noon and pm stands for after the noon.

For example : quarter past 7 in the morning is written as 7 : 15 am and quarter past 7 in the evening is written as 7 : 15 pm.

Example 4 : What will be the time 3 hours after 9 : 45 pm ?
Solution : 9 : 45 hours + 3 hours = 12 : 45 hours
At 12 mid-night it changes to am.
Time 3 hours after 9 : 45 pm = 12.45 am

Exercise 9.6

☞ Write the time using am or pm :

1. 1 : 30 night = _____
2. 5 : 40 evening = _____
3. 12 : 01 night = _____
4. 11 : 45 night = _____
5. 12 : 30 afternoon = _____
6. 5 : 45 morning = _____

☞ What will be the time after 5 hours of the given time :

7. 10 : 50 pm = _____
8. 12 mid-night = _____
9. 7 : 45 am = _____
10. 5 : 40 pm = _____

☞ What was the time before 4 hours of the given time :

11. 3 : 45 am = _____
12. 2 pm = _____
13. 9 : 30 am = _____
14. 12 mid-night = _____

Year, Month and Day

- We know 1 year = 12 months.
- The year has a rotation of 12 months.
- January comes again after December.

Number of Days in a Month

Thirty days have September, April, June and November.
All the rest have thirty one, excepting February alone.
Which has four and twenty four, and every fourth year,
one day more.

- A leap year is that year, number of which can be divided by 4 exactly.
  For example : 2008, 2012, 2016, 2020, 2024, etc.

We can also remember the days of any month counting it by the node of our closed fingers. Start counting the months from the node of the first finger. Each node will have 31 days, each antinode will have 30 days (except February). After the last finger, count again from the first.

Total days in one year are 365.
Total days in a leap year are 366.

Mental Maths

- Fill in the blanks. Choose from the box. You will have to use some of the words more than once.

How long will it take for

1. rice to grow from seed ? _____
2. you to reach Class 7 ? _____
3. a tailor to stitch a dress ? _____
4. you to reach Chennai from Delhi by train ? _____
5. you to reach Chennai from Delhi by plane ? _____
6. you to brush your teeth ? _____
7. you to sing a song ? _____
8. your nails to grow ? _____

minutes hours days months years

Exercise 9.7

Answer the following questions :

1. How many days are there in the month of January ? _____
2. How many days are there in the month of February in a leap year ? _____
3. How many months are there in a year ? _____
4. How many months of a year have 30 days each ? _____
5. How many months of a year have 31 days each ? _____
6. Which month lies between the months of May and July ? _____
7. Which is the seventh month of the year ? _____
8. In which month our Independence Day comes ? _____
9. How many days will be there in February 2008 ? _____
10. Which month comes just after the month of December ? _____

☞ Fill in the blanks :

11. The month of _____ comes just before the month of January.

12. There are _____ days in the month of May.

13. The last month of the year is _____ .

14. There are _____ days in a year.

15. Our school closes for the full month of _____ .

16. There are _____ days in the month of March.

17. In the year 2021, the month of February will have _____ days.

18. The month of _____ lies in between June and August.

Reading a Calendar

CALENDAR 2019

January

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Each day of the week repeats after every seven days. The month of January 2019 begins on Tuesday, therefore the other dates in this month which fall on Thuesday are :

$1 + 7 = 8$, $8 + 7 = 15$, $15 + 7 = 22$, $22 + 7 = 29$

That is 8th, 15th, 22th and 29th.

Exercise 9.8

1. Write the dates of all Fridays from January 2019 to March 2019 :

January _____ February _____ March _____

2. Find the days of the following dates from the calendar :

(a) 13 January, 2019 **(b)** 2 February, 2019

(c) 26 January, 2019 **(d)** 3 March, 2019

3. Find the dates of the four Fridays in the month of January 2019.

_____ _____ _____ _____

4. How many Sundays are there in each month :

(a) January 2019 **(b)** February 2019 **(c)** March 2019

Let's Recall

1. _____ is the third day of the week.
2. Each day of the week repeats after _____ days.
3. Find the dates of all Thursdays in the current month and year.
4. Prepare a calendar for the month of April 2019 in your exercise book.
5. _____ is the eighth month of the year.

☞ Fill in the blanks :

(a) I Wake up at _____ in the morning.
The hour hand is at _____ and the
minute hand is at _____ .

(b) I go to bed at _____ in the night.
The hour hand is at _____ and the
minute hand is at _____ .

Chapter 10

Unit-VI : Metric Measures

Measures of Length

Learning Objectives :

❖ What is Measurement of Length ? ❖ Conversion of Metres and Centimetres ❖ Conversion of Kilometres and Metres ❖ Addition of m and cm ❖ Addition of km and m ❖ Subtraction of m and cm ❖ Subtraction of km and m ❖ Multiplication of m and cm ❖ Division of m and cm.

➲ What is Measurement of Length ?

To know how long or short any object or distance is called measurement of length.

Length of tap or cloth, height of a tree or a room are measured in metres and centimetres. Small lengths such a pencil, book, etc., are measured in centimetres. Big lengths like distance between two cities is measured in kilometres.

For example : Distance of Mumbai from Delhi is 1500 kilometre.

m is the short form of metre.

cm is the short form of centimetre.

km is the short form of kilometre.

1 m = 100 cm and 1 km = 1000 m

To measure small lengths we use a ruler. To measure big lengths we use a metre rod or a measuring tape.

➲ Conversion of Metres and Centimetres

To convert metres into centimetres, we multiply by 100.

Example 1 : Convert 8 m 65 cm into cm.

Solution : 8 m 65 cm = 8 × 100 cm + 65 cm
= 800 cm + 65 = 865 cm

Short method :

⊙ m is at hundreds place with respect to cm. So we can call 8 m 65 cm as 8 hundred 65 cm or directly 865 cm.

8 m 65 cm = 865 cm

Common Mistake

3 m 4 cm = 34 cm ×
3 m 4 cm = 304 cm ✓

Example 2 : Convert 4 m 6 cm into cm.

Solution : Here cm has only one digit. To make m at hundreds place, we put a zero between 4 and 6.

4 m 6 cm = 406 cm

To make m at hundreds place we can add a zero if required between m and cm numbers.

Example 3 : Convert 602 cm into m.

Solution : 602 cm = 6 m 2 cm

➲ Conversion of Kilometres and Metres

1 Kilometre means 1 thousands metres. So kilometre is at thousands place with respect to metres.

Example 4 : Convert these lengths into metres :

(a) 2 km 630 m **(b)** 5 km 27 m **(c)** 8 km 6 m

Solution : In each case, we make the km at thousands place.

(a) 2 km 630 m = 2km 630 m = 2630 m

(b) 5 km 27 m = 5 km 027 m = 5027 m

(c) 8 km 6 m = 8 km 006 m = 8006 m

To make km at thousands place, we can add zeroes as required between km and m number.

Example 5 : Convert these lengths into kilometres :

(a) 4786 m **(b)** 2097 m **(c)** 9009 m

Solution : We take the thousands digit as km :

(a) 4786 m = 4 km 786 m

(b) 2097 m = 2 km 97 m

(c) 9009 m = 9 km 9 m

Exercise 10.1

☞ Convert these lengths into cm :

1. 7 m 10 cm = _____ cm **2.** 18 m 0 cm = _____ cm

3. 9 m 5 cm = _____ cm **4.** 1 m 15 cm = _____ cm

5. 75 m 89 cm = _____ cm **6.** 25 m 35 cm = _____ cm

☞ Convert these lengths into m and cm :

7. 1510 cm = _____ m _____ cm **8.** 702 cm = _____ m _____ cm

9. 770 cm = _____ m _____ cm **10.** 469 cm = _____ m _____ cm

11. 2705 cm = _____ m _____ cm **12.** 1715 cm = _____ m _____ cm

☞ Convert these lengths into m :

13. 8 km 68 m = _____ m **14.** 2 km 805 m = _____ m

15. 8 km 700 m = _____ m **16.** 7 km = _____ m

17. 7 km 9 m = _____ m **18.** 9 km 75 m = _____ m

☞ Convert these lengths into km and m :

19. 7210 m = _____ km _____ m **20.** 5050 m = _____ km _____ m

21. 6200 m = _____ km _____ m **22.** 1980 m = _____ km _____ m

23. 5004 m = _____ km _____ m **24.** 3007 m = _____ km _____ m

➲ Addition of m and cm

Example 6 : Add 15 m 28 cm and 13 m 79 cm.

Solution :

	m	cm
	1	1
	15	28
+	13	79
	29	07

15 m 28 cm + 13 m 79 cm = 29 m 7 cm

Common Mistake

m	cm	
4	25	
+ 3	50	✗
7	75	

m	cm	
4	25	
+ 3	05	✓
7	30	

Exercise 10.2

☞ Add :

1.

m		cm
4	1	2 6
+ 2	8	7 9

2.

m		cm
	7	7 5
+ 2	1	4 0

3.

m		cm
	5	1 8 8
+ 1	8	3 9

☞ Write these in vertical form (columns) and add :

4. 13 m 65 cm + 12 m 84 cm + 15 m 75 cm _____

5. 72 m 70 cm + 42 m 85 cm + 28 m 50 cm _____

6. 9 m 85 cm + 6 m 70 cm + 7 m 5 cm _____

7. 31 m 5 cm + 17 m 25 cm + 48 m 59 cm _____

8. Mehul ran around a field. Its sides are 35 m 75 cm, 37 m 50 cm, 40 m 5 cm and 41 m long respectively. How much distance did he run in one round ?

_____

9. 2 m 85 cm long part of a tree was broken in a storm. Its height remained 12 m 25 cm after break. What was its height before break ? _____

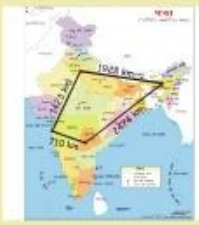
10. Two pieces of iron rods are welded together. One piece is 2 m 25 cm long, another is 1 m 75 cm long. Find the length of the welded iron rods.

_____

11. Raman has three long clothes of the same type. They are 26 m 25 cm, 22 m 75 cm and 24 m 50 cm respectively. What is their total length ? _____

Hots Questions

Jojo is going to attend Maths workshops in Delhi, Mumbai, Hyderabad and Guwahati. He has to come back to Delhi. The distances between these place are as shown on the map of India.



1. What is the total distance he has to travel, if he goes from Delhi to Mumbai to Hyderabad to Guwahati, and back to Delhi?
2. What is the shortest distance Jojo can travel if he must cover all 4 cities ? What will his route be ?

Addition of km and m

Example 7 : Subhi travelled a distance of 435 km 268 m by plane, 125 km 48 m by train and 25 km 925 m by bus. What is the total distance she travelled ?

Solution :

We add in the same way as we add numbers.

1000 m = 10 hundreds of m = 1 km, so we add 'carry' of hundreds of m to 'ones' of km.

Distance travelled by plane	=	435 km 268 m
Distance travlled by train	=	125 km 048 m
Distance travelled by bus	=	25 km 925 m
Total distance travelled by Subhi	=	568 km 241 m

km	m
4 3 5	2 6 8
1 2 5	0 4 8
+ 2 5	9 2 5
5 8 6	2 4 1

Exercise 10.3

☞ Add :

1.

	km		m	
	4	9	2	8 0
+	2	9	0	3 5

2.

	km		m	
		5	1	0 3
+		3	6	4 0

3.

	km		m	
		2 7	0	2 1
+		3 5	2	2 0

☞ Write these in columns (vertical form) and add :

4. 15 km 75 m + 18 km 9 m + 42 km 110 m

5. 3 km 486 m + 2 km 468 m + 4 km 325 m

6. 7 km 832 m + 2 km 99 m + 1 km 23 m

7. Mona cycles 6 km 85 m in the morning and 5 km 925 m in the evening. What is the total distance Mona cycles in the day ?

8. Central Railway Station is 5 km 140 m from airport which is 2 km 65 m from Rajan home. Rajan goes to Central Railway Station then to airport. Find the total distance he travelled.

9. David travelled a distance of 356 km 250 m by plane, 25 km 125 m by bus and 50 km 75 m by train. What is the total distance he travelled ?

10. Amita went 3 km 125 m to her school, then 5 km 85 m to Mall Road and then 6 km 175 m to her house. How much total distance did she travel ?

➲ Subtraction of m and cm

Example 8 : Shivani gave the tailor 7 m 25 cm of cloth to make her two *kurties*. He returned 4m 75 cm of cloth. How much cloth was used for the *kurties*.

Solution :

We borrow 1 m = 10 tens of cm

	m	cm
	6	12
	7	2 5
−	4	7 5
	2	5 0

Length of the cloth = 7 m 25 cm

Length of the cloth returned = 4 m 75 cm

Length of the cloth used for the *kurites* = 2 m 50 cm

Exercise 10.4

☞ Subtract :

1.

m	cm
9	2 0
– 5	8 0

2.

m	cm
5	5 0
– 3	7 5

3.

m		cm
5	6	1 8
– 1	7	2 9

☞ Write these in columns (vertical form) and subtract :

4. 31 m 80 cm – 18 m 95 cm
5. 70 m 48 cm – 62 m 89 cm
6. 28 m 10 cm – 20 m 60 cm
7. 14 m 35 cm – 13 m 45 cm

☞ Find the difference :

8. 59 m 25 cm and 42 m 67 cm
9. 80 m 35 cm and 28 m 86 cm
10. 28 m 9 cm and 14 m 35 cm
11. 27 m 45 cm and 20 m 75 cm
12. Jai jumped 1 m 5 cm high and Surjeet jumped 95 cm high. Who jumped higher and by how much ?
13. A roll of wire has 100 m wire. Two pieces 48 m 35 cm and 45 m 80 cm long are cut from it. How much wire is left in the roll ?
14. A cloth was 32 m 20 cm long. The tailor cut 25 m 75 cm cloth out of it for dresses. How much cloth was left ?
15. Roma is 1 m 15 cm tall. Her sister Shivani is 95 cm tall. How much taller is Roma than Shivani ?

Subtraction of km and m

Example 9 : Ratna's house is 7 km 625 m from the railway station and Shivani's house is 6 km 825 m from the railway station. At how much distance is Ratna's house more than Shivani's house from railway station ?

Solution :

Distance of Ratna's house from railway station = 7 km 625 m
Distance of Shivani's house from railway station = 6 km 825 m

km	m
6	16
7	6 2 5
– 6	8 2 5
0	8 0 0

Ratna's house is at 800 m more distance from railway station.

Note.

⊙ *We borrowed 1 km = 10 hundreds of m.*

Exercise 10.5

☞ Subtract :

1.

	km		m		
	8	6	0	0	9
−	1	2	0	8	7

2.

	km		m		
	4	3	5	6	5
−	3	5	7	8	8

3.

	km		m		
	3	7	0	8	5
−	1	8	9	3	7

☞ Write these in columns (vertical form) and subtract :

4. 7 km 11 m – 5 km 835 m

5. 8 km 640 m – 2 km 645 m

6. 4 km 120 m – 2 km 475 m

7. 5 km 70 m – 3 km 452 m

8. 52 km 5 m – 34 km 176 m

9. 13 km 301 m – 9 km 224 m

10. My village is 51 km 250 m from Patna. Rahul's village is 39 km 470 m from Patna. Whose village is at greater distance from Patna and by how much ?

11. Ratanpur is 72 km 725 m from Raghupur via train-route. Via bus-route Ratanpur is 70 km 850 m from Raghupur. What is the difference in the distance of the two routes ?

12. A journey of 120 km was partly covered by car and partly by bus. The car covered 70 km 400 m. Find the distance covered by bus.

➲ Multiplication of m and cm

Example 10 : What is the total length of 8 ropes each 15 m 21 cm long ?

Solution :

Length of one rope = 15 m 21 cm

Total length of 8 ropes = (15 m 21 cm) × 8

10 tens of cm = 1m

Add 'carry' of 10 tens to 'ones' of m.

Total length of 8 ropes = 121 m 68 cm

	m		cm	
	1	5	2	1
			×	8
1	2	1	6	8

Exercise 10.6

☞ Multiply :

1.

m	cm
7	6 5
×	1 2

2.

m	cm
8	5 2
	× 9

3.

m	cm
1 2	0 9
	× 6

☞ Write these in columns (vertical form) and multiply :

4. 7 m 2 cm × 10 = _____

5. 3 m 25 cm × 6 = _____

6. 25 m 75 cm × 15 = _____

7. 12 m 20 cm × 5 = _____

8. 46 m 48 cm × 35 = _____

9. 64 m 85 cm × 24 = _____

10. An earthworm crawls on a wall 7 m 50 cm in 1 minute. How much will it crawl in 1 hour at the same speed ?

11. There is 97 m 36 cm cable wire in a roll. How much cable wire is there in 26 rolls ?

12. A *salwar-kurta* requires 3 m 75 cm of cloth. How much cloth will be required for making 9 such *salwar-kurta* ?

13. A bike goes 80 m 25 cm in 1 minute. How much distance will it go in 25 minutes at the same speed ?

14. A wire roll has 45 m 75 cm wire. What is the length of the wire in 53 such rolls ?

15. What is the total length of 15 strings each length of 35 m 16 cm long ?

➲ Division of m and cm

Example 11 : A tailor cuts 30 m 25 cm cloth into 5 equal pieces. What is the length of one piece ?

Solution : 1 m = 100 cm

Ones of m are at hundreds place with respect to cm.

So we divide in the same way as we divide numbers.

Length of each piece = 6 m 05 cm

m	cm
6	05
5) 30	25
30	
	25
	25
	0

Exercise 10.7

Divide :

1. $\begin{array}{r} \text{m} \quad \text{cm} \\ 6\overline{)28 \quad 20} \end{array}$

2. $\begin{array}{r} \text{m} \quad \text{cm} \\ 7\overline{)24 \quad 29} \end{array}$

3. $\begin{array}{r} \text{m} \quad \text{cm} \\ 8\overline{)51 \quad 28} \end{array}$

4. $\begin{array}{r} \text{m} \quad \text{cm} \\ 12\overline{)25 \quad 44} \end{array}$

5. $\begin{array}{r} \text{m} \quad \text{cm} \\ 5\overline{)42 \quad 15} \end{array}$

6. $\begin{array}{r} \text{m} \quad \text{cm} \\ 9\overline{)51 \quad 66} \end{array}$

Write in long division form and divide :

7. 25 m 20 cm ÷ 8
8. 40 m 11 cm ÷ 7
9. 10 m 24 cm ÷ 8
10. 32 m 22 cm ÷ 9
11. 11 m 40 cm ÷ 3
12. 7 m 60 cm ÷ 5
13. 84 m 51 cm ÷ 9
14. 97 m 23 cm ÷ 7
15. 75 m 36 cm ÷ 6
16. 71 m 85 cm ÷ 5
17. Rita cuts 11 m cloth into 5 equal pieces. Find the length of one piece. ____________
18. 19 m 52 cm of ribbon is cut into 4 equal pieces. What is the length of one piece ? ____________
19. 6 boys shared a thread reel 85 m 32 cm long. What is the length of the thread got by each boy ? ____________
20. 13 m 20 cm cloth is cut into 8 equal pieces. What is the length of one piece ? ____________

Let's Recall

1. Which unit will be used to measure the length of a match stick ?
   (a) metre ☐ **(b)** centimetre ☐ **(c)** kilometre ☐
2. Which of the following is the bigger unit ?
   (a) metre ☐ **(b)** kilometre ☐ **(c)** centimetre ☐
3. Name the standard unit of length, you will use to measure the following :
   (a) length of a pencil **(b)** length of a blackboard
   (c) length of your pencilbox **(d)** length of a chalk
   (e) length of a wall **(f)** length of a crayon
4. Look around and make a list of things that are :
   (a) less than 5 centimetres long. ____________
   (b) between 5 centimetres and 10 centimetres long. ____________
   (c) more than 10 centimetres long. ____________
5. If a rope is 10 m long, then how will you write its length in cm ? ____________

Chapter

11 Measures of Mass

Learning Objectives :

❖ What is Measurement of Mass ? ❖ Units of Measuring Weight ❖ Conversion of kg and g ❖ Addition of kg and g ❖ Subtraction of kg and g ❖ Multiplication of kg and g ❖ Division of kg and g.

What is Measurement of Mass ?

To know the quantity of any weight more or less, we measure the weight of objects.

Units of Measuring Weight

To weigh heavy items like rice, wheat, sugar, etc. we use kilograms while to weigh small things like gold, silver, medicines, etc. we use gram and milligram. The words hectogram, decagram, decigram, centigram are in little use.

Very heavy items are weighed in metric ton, quintal, myriagram and kilogram.

1 metric ton	=	1000 kilograms
1 quintal	=	100 kilograms
1 myriagram	=	10 kilograms
1 kg	=	1000 g
1 g	=	1000 mg

In short, we write g for gram, kg for kilogram and mg for milligram.

Fact File

Scientifically mass is very much different from weight. Mass of an object changes nowhere. Weight of an object changes at different places. However, people are habituated to use the word 'weight' in place of 'mass'. Therefore, the verb 'weigh' and noun 'weight' of different denominations are common in use.

Conversion of kg and g

Example 1 : Convert 5 kg 603 g into g.

Solution : 5 kg 603 g $= 5 \times 1000$ g $+ 603$ g
$= 5000$ g $+ 603$ g
$= 5603$ g

Example 2 : Convert 8 kg 25 g into grams.

Solution : 8 kg 25 g $= 8 \times 1000$ g $+ 25$ g
$= 8000$ g $+ 25$ g
$= 8025$ g

Fact File

We write g with kg in three places. We write mg with g in three places.

Note :

- *To make 8 at thousands place we put as zeroes as required in between kg and g numbers.*

Example 3 : Convert these masses into kilograms :
(a) 4639 g **(b)** 7028 g **(c)** 9005 g

Solution : We take the thousands digit as kg.
(a) 4639 g = 4 kg 639 g
(b) 7028 g = 7 kg 28 g
(c) 9005 g = 9 kg 5 g

Example 4 : Convert these masses into milligrams :
(a) 7 g 690 mg **(b)** 9 g 30 mg **(c)** 7 g 6 mg

Solution : Since 1 g = 1000 mg, in each case we make the g at thousands place.

(a) 7 g 690 mg = 7 × 1000 mg + 690 mg
= 7000 mg + 690 mg
= 7690 mg

(b) 9 g 30 mg = 9 × 1000 mg + 30 mg
= 9000 mg + 30 mg
= 9030 mg

(c) 7 g 6 mg = 7 × 1000 mg + 6 mg
= 7000 mg + 6 mg
= 7006 mg

Common Mistake

6g 5 mg = 65 mg ×
605 ×
6005 ✓

To make 7 at thousands place we can add as zeroes in mg numbers as required.

Exercise 11.1

Convert these masses into g :

1. 2 kg 145 g = _____ g
2. 4 kg 10 g = _____ g
3. 9 kg 82 g = _____ g
4. 6 kg 34 g = _____ g
5. 8 kg 0 g = _____ g
6. 5 kg 9 g = _____ g

☞ Convert these masses into kg and g :

7. 7043 g = _____ kg _____ g **8.** 9696 g = _____ kg _____ g

9. 9001 g = _____ kg _____ g **10.** 4004 g = _____ kg _____ g

11. 3010 g = _____ kg _____ g **12.** 2780 g = _____ kg _____ g

☞ Convert these masses into mg :

13. 8 g 480 mg = _____ mg **14.** 3 g 50 mg = _____ mg

15. 9 g 5 mg = _____ mg **16.** 6 g 496 mg = _____ mg

➲ Addition of kg and g

Example 5 : There are 19 kg 725 g of apples in one carton and 24 kg 693 g in another. What is the total mass of the apples ?

Solution : We add kg and g in the same way as we add numbers.

Mass of apples in one carton = 19 kg 725 g

Mass of apples in another carton = 24 kg 693 g

Total mass of apples = 44 kg 418 g

	kg		g		
	1	1	1		
	1	9	7	2	5
+	2	4	6	9	3
	4	4	4	1	8

Note

⊙ *1000 g = 10 hundreds of g = 1 kg, so we add 'carry' of hundreds of g to 'ones' of kg.*

Exercise 11.2

☞ Add :

1.

kg	g
3	9 5
+ 2	3 7 5

2.

kg	g
4	2 6 5
+ 5	4 9 5

3.

kg	g
1 1	9 6 0
+ 1 5	7 5 0

☞ Write these in columns and add :

4. 4 kg 598 g + 2 kg 499 g **5.** 3 kg 875 g + 3 kg 495 g

6. 5 kg 949 g + 3 kg 480 g **7.** 6 kg 345 g + 8 kg 20 g

8. 9 kg 415 g + 4 kg 320 g **9.** 3 kg 260 g + 5 kg 685 g

10. 34 kg 162 g + 15 kg 894 g **11.** 32 kg 285 g + 16 kg 565 g

12. The mass of an empty tin is 1 kg 180 g, 6 kg 450 g chocolates are put in it. What is the total mass of the tin with biscuits ?

_____

13. A kitten weighs 1 kg 675 g and a puppy weighs 2 kg 155 g. What is their total mass ?

14. Ranjan bought 1 kg 450 g wheat, 2 kg 775 g of rice and 1 kg 325 g of sugar. What is the total mass of these items ?

15. Ali buys 5 kg 125 g of vegetables and 6 kg 785 g of fruits. How much does her carry-bag weigh ?

➲ Subtraction of kg and g

Example 6 : A vessel full of oil weighs 12 kg 30 g and the empty vessel weighs 2 kg 740 g. What is the mass of the oil in this vessel ?

Solution : We subtract kg and g in the same way as we subtract numbers.

Mass of the vessel with oil = 12 kg 30 g
Mass of the empty vessel = 2 kg 740 g
Mass of the oil = 9 kg 290 g

kg		g	
0	11	9	13
~~1~~	~~2~~	~~0~~	~~3~~ 0
– 2		7	4 0
9		2	9 0

Note

⊙ *We borrowed 1 kg = 10 hundreds of g.*

Exercise 11.3

☞ Subtract :

1.

kg		g	
8		0	6 0
– 5		6	9 0

2.

kg			g		
3	6		0	0	7
– 2	5		5	7	5

3.

kg			g		
1	2		0	0	0
– 4			2	0	5

☞ Write these in columns and find the difference :

4. 7 kg 250 g and 3 kg 455 g
5. 8 kg 182 g and 7 kg 95 g
6. 5 kg 4 g and 3 kg 775 g
7. 8 kg 15 g and 4 kg 536 g
8. 10 kg and 4 kg 380 g
9. 9 kg 220 g and 7 kg 250 g
10. Manvi gets 3 kg 375 g of rice on her ration card in a month. Her family needs 5 kg of rice in a month. How much of rice does she purchase from the market ?

11. A sack contained 45 kg 70 g of wheat. Roso used 26 kg 590 g wheat this month. How much wheat is left in the sack ? _____

12. A carton of grapes weighs 5 kg 120 g. If the carton itself weighs 175 g, find the mass of the grapes. _____

13. Roma purchased 5 kg of apples. 250 g of apples were found rotten. 2 kg 475 g of apples were used in the family. What is the mass of apples left ? _____

Multiplication of kg and g

Example 7 : 4 kg 638 g cakes are contained in one box. How much cakes will be contained in 4 such boxes ?

Solution :

Mass of cakes in 1 box = 4 kg 638 g

Mass of cakes in 4 boxes = 18 kg 552 g

kg	g
2	1 3
4	6 3 8
	× 4
1 8	5 5 2

Note

- *We added 'carry' of hundreds of g to 'ones' of kg.*

Exercise 11.4

Multiply :

1. kg g
   8 8 8 8
   × 8
   _____

2. kg g
   1 7 2 5
   × 5
   _____

3. kg g
   2 0 7 5
   × 6
   _____

Write in vertical form and multiply and write the products in given space.

4. 9 kg 443 g × 3 = _____
5. 6 kg 490 g × 9 = _____
6. 1 kg 675 g × 6 = _____
7. 465 g × 7 = _____
8. 2 kg 80 g × 9 = _____
9. 9 kg 558 g × 2 = _____
10. 8 kg 536 g × 5 = _____
11. 3 kg 33 g × 4 = _____
12. What is the total weight of 5 cartons of mangoes, if each carton weighs 5 kg 220 g ? _____
13. If a sports shoe weighs 478 g, what will be the total mass of 4 pairs of such shoes ? _____
14. A English book for class third weighs 325 g. How much will 6 books weigh ? _____

15. A box of chocolates weighs 1 kg 320 g. Find the mass of 9 such boxes.

_____

Division of kg and g

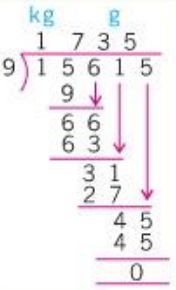
Example 8 : 15 kg 615 g of oil is distributed equally into 9 families. How much does each family got ?

Solution : 1 kg = 1000 g

'Ones' of kg are at thousands place with respect to g.

So we divide in the same way as we divide numbers.

Mass of one family = 1 kg 735 g



Exercise 11.5

Divide (in your exercise book) :

1. kg g: $7\overline{)8\ 729}$ **2.** kg g: $5\overline{)6\ 135}$ **3.** kg g: $6\overline{)4\ 512}$

Write in long division form and divide :

4. 15 kg 453 g ÷ 9 **5.** 9 kg 234 g ÷ 6 **6.** 9 kg 152 g ÷ 8

7. 9 kg 261 g ÷ 7 **8.** 8 kg 685 g ÷ 5 **9.** 6 kg 136 g ÷ 4

10. 7 kg 125 g ÷ 3 **11.** 27 kg 945 g ÷ 5 **12.** 12 kg 504 g ÷ 8

13. 6 kg 360 g toffees are divided equally among 8 families. How much does each family get ?

14. 5 persons share 8 kg of sugar equally. How much does each person get ?

15. 6 glass pots weigh 7 kg 134 g. What is the mass of 1 pot ?

Let's Recall

1. _____ is the standard unit of weight.

2. Make a list of ten things around you that are measured by weight. Paste or draw their pictures.

3. Name some of your classmates who you think weigh :

(a) almost the same as you _____ _____

(b) more than you _____ _____

(c) less than you _____ _____

4. Find out your weight and your father's weight. Who is heavier—You or your father ?

5. The bigger unit of weight is _____ .

Chapter 12

Measures of Capacity

Learning Objectives :

❖ What is Measurement of Capacity ? ❖ Units of Measuring Capacity ❖ Addition of L and mL ❖ Subtraction of L and mL ❖ Multiplication of L and mL ❖ Division of L and mL.

What is Measurement of Capacity ?

To know correct quantity of any liquid is called measurement of capacity.

Units of Measuring Capacity

Liquids such as oil, petrol, water and milk are measured in litres. Big amounts of water in city supply are measured in kilolitres while small amounts of liquid medicines are measured in millilitres.

Short form is L for litre, kL for kilolitre and mL for millilitre.

Fact File

The capacity of container tells us how much liquid it can hold.

$$1 \text{ L} = 1000 \text{ mL}$$

To make L at thousands place we put as zeroes as required between L and mL number.

Example 1 : Convert these capacities into mL :
(a) 2 L 375 mL **(b)** 6 L 70 mL
(c) 9 L 7 mL

Solution : In each case we make the litre at thousands place :
(a) 2 L 375 mL = 2375 mL
(b) 6 L 70 mL = 6070 mL
(c) 9 L 7 mL = 9007 mL

Common Mistake

6 L 7 mL = 67 mL ✗
= 607 mL ✗ = 6007 mL

Example 2 : Convert mL into L and mL :
(a) 4327 mL **(b)** 2065 mL **(c)** 7006 mL

Solution : We take the thousands digit as litre :
(a) 4327 mL = 4 L 327 mL **(b)** 2065 mL = 2 L 65 mL
(c) 7006 mL = 7 L 6 mL

Example 3 : Convert the following into litres :
(a) 3 kL 704 L **(b)** 6 kL 60 L **(c)** 7 kL 6 L

Solution : We put the digit of kL at thousands place :
(a) 3 kL 704 L = 3704 L **(b)** 6 kL 60 L = 6060 L **(c)** 7 kL 6 L = 7006 L

Example 4 : Convert the following into kL *and* L :
(a) 2328 L **(b)** 5068 L **(c)** 7003 L

Solution : We take the thousands digit as kL :
(a) 2328 L = 2 kL 328 L **(b)** 5068 L = 5 kL 68 L **(c)** 7003 L = 7 kL 3 L

To make kL at thousands place we put as zeroes as required between kL and L number.

Exercise 12.1

☞ Convert the following into mL :

1. 6 L 80 mL = _____ mL **2.** 5 L 120 mL = _____ mL
3. 7 L 9 mL = _____ mL **4.** 8 L 329 mL = _____ mL

☞ Convert the following into L and mL :

5. 6070 mL = _____ L _____ mL **6.** 5009 mL = _____ L _____ mL
7. 7345 mL = _____ L _____ mL **8.** 4805 mL = _____ L _____ mL

☞ Convert the following into L :

9. 4 kL 220 L = _____ L **10.** 7 kL 5 L = _____ L
11. 5 kL 128 L = _____ L **12.** 5 kL 70 L = _____ L

☞ Convert the following into kL and L :

13. 5009 L = _____ kL _____ L **14.** 7050 L = _____ kL _____ L
15. 5230 L = _____ kL _____ L **16.** 4239 L = _____ kL _____ L

Addition of L and mL

Addition of litres and millilitres is done in the same way as addition of kilograms and grams.

Example 5 : A milkman has a cow and a buffalo. The cow gives 8 L 695 mL milk and the buffalo gives 12 L 639 mL. How much milk does milkman get from both the animals ?

Solution : We add L and mL in the same way as we add numbers.
Milk given by the cow = 8 L 695 mL
Milk given by the buffalo = 12 L 639 mL
Milk given by both = 21 L 334 mL

	L	mL	
	1	1 1	
	8	6 9	5
+	1 2	6 3	9
	2 1	3 3	4

Note

⊙ *1000 mL = 10 hundreds of mL = 1 L, so we add 'carry' of hundreds of mL to 'ones' of L.*

Exercise 12.2

☞ Add :

1.

L	mL
4	5 9
+ 2	4 9 9

2.

L	mL
4	9 4 9
+ 3	4 8 0

3.

L	mL
1 1	4 9 5
+ 1 6	5 6 5

☞ Write these in columns and add :

4. 8 L 280 mL + 5 L 888 mL

5. 4 L 598 mL + 2 L 422 mL

6. 5 L 685 mL + 3 L 260 mL

7. 2 L 315 mL + 3 L 95 mL

8. 3 L 875 mL + 6 L 495 mL

9. 6 L 345 mL + 8 L 20 mL

10. 16 L 585 mL + 32 L 285 mL

11. 34 L 162 mL + 15 L 894 mL

12. Sudha used 6 L 275 mL paint for doors and 3 L 250 mL for windows. How much paint did she use ?

13. There was 3 L 370 mL petrol in Rajni's car. She got 18 L 750 mL more petrol filled in it. How much petrol is there in the car now ?

14. Renu bought 5 L 550 mL milk from one dairy and 8 L 250 mL from another. How much milk did she buy ?

15. A tin contains 13 L 350 mL oil. Another tin contains 1 L 750 mL oil more than it. How much oil is there in the another tin ?

➲ Subtraction of L and mL

Example 6 : Monu put 12 litres petrol in his car. At the end of the journey, 4 L 650 mL petrol was left in the car. How much petrol was consumed?

Solution :

Petrol put in the car = 12 L

Petrol left in the car = 4 L 650 mL

Petrol consumed = 7 L 350 mL

L		mL		
0	11	9	10	
~~1~~	~~2~~	~~0~~	~~0~~	0
− 4		6	5	0
7		3	5	0

Note

⊙ *We borrowed 1 L = 10 hundreds of mL.*

Exercise 12.3

☞ Subtract :

1.

L	mL
5	0 0 5
– 3	7 7 5

2.

L	mL
5	2 5 0
– 3	4 5 5

3.

L	mL
1 0	0 0 0
– 4	3 8 0

☞ Write these in the columns and find the difference :

4. 8 L 60 mL – 5 L 690 mL
5. 9 L 220 mL – 7 L 250 mL
6. 8 L 15 mL – 4 L 536 mL
7. 8 L 180 mL – 7 L 95 mL
8. 8 L – 5 L 175 mL
9. 14 L 375 mL – 7 L 455 mL
10. 9 L 50 mL – 7 L 225 mL
11. 12 L – 4 L 205 mL

12. A bucket has a capacity of 16 litres. If I pour 12 L 450 mL water into it, how much more water is required to fill it over ?

13. Raja bought 10 L paint. He used 4 L 250 mL paint for doors and 2 L 350 mL for windows. How much paint was left with him ?

14. A vessel had 4 L 250 mL milk. To prepare tea, 1 L 375 mL milk was used. How much milk was left in the vessel ?

15. A big container contained 100 litres petrol. During the day 65 L 750 mL petrol was sold and 500 mL was spilled. How much petrol was left in the container ?

Multiplication of L and mL

Example 7 : 4 L 350 mL milk is brought at Anu's house daily. How much milk will be brought in 8 days ?

Solution :

Milk brought in one day = 4 L 350 mL

Milk brought in 8 days = 34 800 mL

L	mL
2 4	
4	3 5 0
	× 8
3 4	8 0 0

Note

⊙ *We add 'carry' of hundreds of mL to 'ones' of 1.*

Exercise 12.4

☞ Multiply :

1.

L	mL
2	0 8 5
	× 8

2.

L	mL
2	2 6 5
	× 6

3.

L	mL
1	6 7 5
	× 9

☞ Write these in vertical form and multiply :

4. 6 L 490 mL × 9 = _____

5. 9 L 335 mL × 3 = _____

6. 2 L 575 mL × 6 = _____

7. 275 mL × 7 = _____

8. 3 L 44 mL × 4 = _____

9. 8 L 645 mL × 5 = _____

10. 4 L 220 mL diesel is consumed by a truck in one hour. How much diesel will be consumed by it in 12 hours ?

11. A container can hold 5 L 375 mL oil. How much oil can be hold by 4 such containers ?

12. 265 mL petrol is consumed to fire a stove for one hour. How many litres petrol will be consumed to fire that stove for 8 hours ?

➲ Division of L and mL

Example 8 : A drum can hold 31 L 341 mL water. If it is one third full, how much water is in the tank ?

Solution :

One third means 1/3,
that is divide by 3.

1 L = 1000 mL

'Ones' of L are at thousands place with respect to mL.
So we divide in the same way as we divide numbers.
There is 10 L 447 mL water in the tank.

L	mL
10	447

$$3\overline{)31341}$$

3 ↓ ↓
13
12 ↓
14
12
21
21
0

Exercise 12.5

☞ Divide (in your exercise book) :

1. $6\overline{)8\ 232}$ (L mL)
2. $9\overline{)8\ 433}$ (L mL)
3. $5\overline{)9\ 235}$ (L mL)

☞ Write in long division form and divide :

4. 11 L 440 mL ÷ 8 = _____
5. 9 L 236 mL ÷ 4 = _____
6. 6 L 445 mL ÷ 5 = _____
7. 5 L 325 mL ÷ 3 = _____
8. 15 L 264 mL ÷ 9 = _____
9. 9 L 261 mL ÷ 7 = _____
10. Alka put one quarter of a 5 L can of oil in her car. How much oil did she put ?

    _____
11. 13 L 464 mL of medicine was packed equally in 9 bottles. How much medicine was packed in each bottle ?

    _____
12. 5 L 300 mL milk was equally distributed among 4 persons. How much milk did each get ?

    _____
13. 3 L Cola bottle was shared equally by 8 children. How many mL Cola did each get ?

    _____

Let's Recall

1. What is the relationship between litres and millilitres ? _____
2. How many packets of 250 mL can be made from 1 litre milk ? _____
3. What is the standard unit of capacity ? _____
4. In which units are smaller quantities of liquids measured ? _____
5. Find five containers that hold less water than a one-litre bottle. _____
6. Take a cup to measure the capacity of the given items. Compare and say which has more capacity.

   (a) Your waterbottle or a glass.

   (b) Your milk cup or a bowl from the kitchen.
7. How many packets of 500 mL can be made from 2 litres milk ? _____
8. Find the containers that hold more water than a one-litre bottle. _____

Chapter 13

Unit-VII : Geometry and Patterns

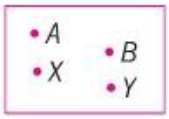
Lines and Plane Figures

Learning Objectives :

❖ Lines Through Points ❖ Drawing Line Segment of a Given Length ❖ Measuring a Line segment ❖ To Draw a Circle ❖ Perimeter ❖ Word Problems on Perimeter ❖ Tangram

Point

In geometry, point is a location. It is the most basic idea of geometry. It has no width, no length and no depth. It can be shown by a dot (.).



We can think of the fine tip of a pencil or the needle. We name a point by capital letters A, B, C, etc. Points A, B, X and Y are shown in picture.

Line

A line is defined as a row of points extends infinitely in two directions. In other words, on joining two points with the help of a ruler and extending on both sides endlessly we get a line. Line has one dimension, length. Points that are on the same line are called collinear points.

A line seems to run endlessly on either side just like, telephone, electricity or wires seem to run endlessly on either side.

We cannot draw a line endlessly on a piece of paper. So we put arrows on two points of it. A line has no beginning and no end. Thus, it has no end point.

We name a line with the help of two points on it. *For example,* following figure is line AB. It's written as $\overleftrightarrow{AB}$ or $\overleftrightarrow{BA}$.

Line Segment

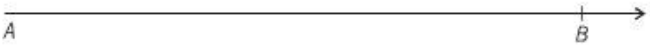
A part of a line that has defined end points is called a line segment. In other words, on joining two points with a ruler, we get a line segment. It has a beginning point and an end point.

Thus, it has two end points. A line segment has length but practically no breadth or thickness. A line segment is made up of lots of points.

In the figure, line segment AB is given. It is written as $\overline{AB}$.

Line and Ray

In geometry, a ray is a line with a single end point (or point of origin) that extends infinitely in one direction. On joining two points with a ruler and extending endlessly on one side only, we get a ray. A ray has a beginning but no end.

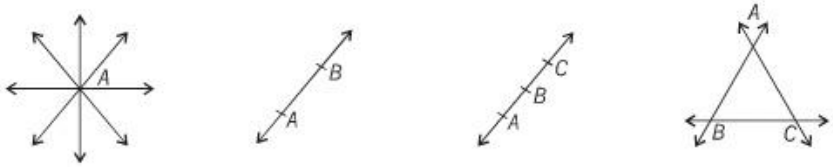


Thus it has one end point (beginning). A ray is shown by the beginning point and one more point at a distance with an arrow on it. A ray has length but practically no breadth or thickness. A ray is made up of lots and lots of points.

In the figure, ray AB is shown. We can write it $\overrightarrow{AB}$ but not $\overrightarrow{BA}$.

➲ Lines Through Points

We can draw many lines through a point but we can draw only one line through two points.

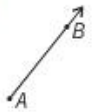


We can draw one line through three points only when they are in a line.

When three points are not in a line we can draw three lines, each passing through only two of the three points.

Exercise 13.1

☞ Write which of the following is a line, ray or line segment :

1. 

2. 

3. 

4. 

5. 

6. 

☞ Join these points together using your ruler and pencil :

7. N M

8. A B

9. P Q

☞ Fill in the blanks :

10. We can draw only one line through _____ points.

11. A line has _____ beginning, _____ end.

12. A ray has _____ beginning, _____ end.

13. We can draw _____ lines through a point.

14. A line segment has _____ beginning, _____ end.

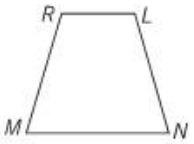
15. A line segment has _____ end points.

16. A line has _____ end point.

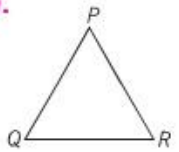
17. A ray has _____ end point.

☞ Name the points and line segments in the following figures :

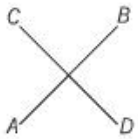
18.



19.



20.



Points _____ _____ _____

Line segments _____ _____ _____

➲ Drawing Line Segment of a Given Length

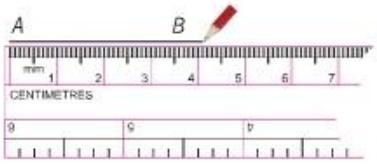
Each centimetre on the ruler is divided into 10 equal parts. Each part is called as millimetre (mm).

We put a dot (.) between the cm reading and mm reading. *For example,* 4 big divisions 4 cm and 7 small divisions 7 mm are written as 4.7 cm.

To draw a line segment of 4.1 cm (say), we place the ruler on the paper. We hold the ruler firmly with left hand.

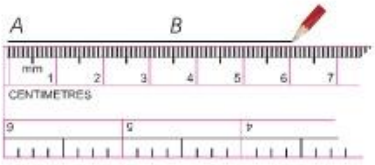
Mark the first point, *A* above the '0' mark on ruler. Mark a second point, *B*, above the 4.1 cm mark on the ruler.

Join *A* and *B* pulling the pencil tip along the edge of the ruler.



Line AB = 4.1 cm

Measuring a Line Segment



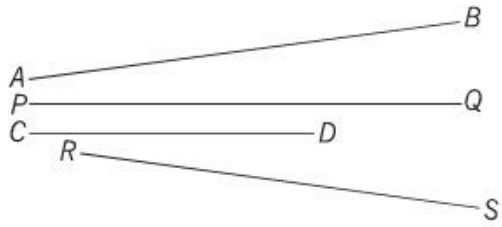
We put the zero (0) mark of the ruler at one end, A, of the line segment. Now we read the mark 6.0 of the ruler of B, the other end of the line segment.

Thus, the length of AB = 6.0 cm.

Exercise 13.2

Draw line segments of the following lengths in your exercise book :

1. line segment EF = 10.2 cm
2. line segment LM = 12 cm
3. line segment PQ = 15.1 cm
4. line segment AB = 7 cm
5. line segment CD = 8.5 cm
6. line segment GH = 6.6 cm
7. Measure these line segments and write their lengths :



_____ cm

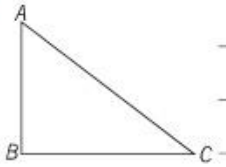
_____ cm

_____ cm

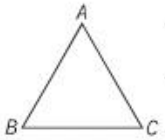
_____ cm

Measure the sides of the following figures :

8.



_____ cm
_____ cm
_____ cm



_____ cm
_____ cm
_____ cm

_____ cm
_____ cm
_____ cm

Measure the distance between the points :

9. Q R
10. M N
11. O P

Parallel Lines

Two or more than two lines in a plane that do not intersect or meet each other at any point by extending, we said to be parallel lines.

Put your ruler on the paper. Pull your pencil tip along both the edges of your ruler.

These two line segments will never meet, even if they are extended endlessly. These lines are called parallel lines.

The opposite edges of your ruler are parallel. The opposite edges of your book are parallel. The opposite sides of your room are parallel.

Polygon

A polygon is a plane figure that is bounded by a infinite chain of straight line segments closing in a loop to form a closed polygonal chair or circuit.

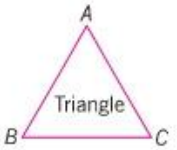
These are all polygons.

Quadrilateral

A quadrilateral is a polygon with four edges (or sides) and for vertices or corner. It has four angles. Its sides and angles can be equal or unequal.

Triangle

A triangle is a polygon with three edges and three vertices. It is one of the basic shapes in geometry. A triangle with vertices A, B and C is denoted ΔABC.



Rectangle

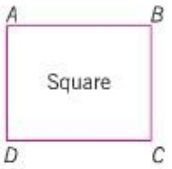
A rectangle is a quadrilateral with four edges four sides, four angles and four vertices. A rectangle with vertices A, B, C and D is denoted by $\square ABCD$. Opposite sides of a rectangle are equal edges.

$$AB = CD \quad \text{and} \quad AD = BC$$

Square

A rectangle with all sides and angles equal is called a square. A square with vertices *ABCD* is denoted by □*ABCD*.

In □*ABCD*, $AB = BC = CD = DA$

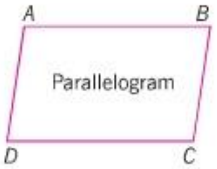


Fact File

All squares are rectangles but all rectangles are not squares.

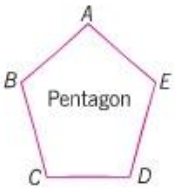
Parallelogram : Rhombus

A parallelogram is a simple (non self-intersecting) quadrilateral with two pairs of parallel sides. The opposite facing sides of a parallelogram are equal in length and opposite angles of a parallelogram are of equal in measure. In figure, parallelogram *ABCD* is given.



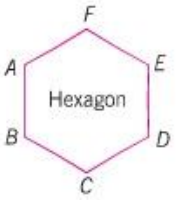
Pentagon

1. A pentagon has 5 sides and 5 vertices.
2. Name of the side figure is pentagon *ABCDE*.
3. A pentagon that has all sides and angles are equal is called centrifugal.



Hexagon

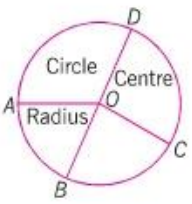
1. A hexagon has 6 sides and 6 vertices.
2. Name of the side figure is hexagon *ABCDEF*.
3. A hexagon with 6 equal sides is called regular hexagons.



Circle

A circle is a curve and not a line segment. It has no side and no vertex. In the side figure, *O* is a point inside the circle such that the distance of any point on the circle from O is the same.

$$OA = OB = OC = OD = \_\_\_\_\_$$



O is called the centre of the circle and each of the distance *OA*, *OB*, _____ is called a radius of the circle. Name of the side figure is circle *O*.

To Draw a Circle

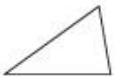
To draw a circle, we mark a point *O* on paper as centre of the circle. Now we take a compass with a fine tip pencil fixed in it. Place

its metal point on the zero mark of a ruler. Now open it to make the pencil tip touch the mark on the ruler equal to the radius desired.

Place and keep the metal point firmly at the point *O*. Move the pencil tip on the paper till we return at the starting point. The figure obtained is a circle of desired radius.

Exercise 13.3

☞ Name each of these shapes :

1.  _____ **2.**  _____ **3.**  _____ **4.**  _____ **5.**  _____

6. Write the number of sides and vertices in each figure :

	Circle	Rectangle	Triangle	Pentagon	Hexagon
Sides					
Vertices					

☞ Fill in the blanks :

7. A circle has no _____ and no _____

8. _____ sides of a rectangle are equal.

9. A rectangle has _____ corners.

10. The length of a rectangle is _____ than its breadth.

11. Opposite sides of a parallelogram are _____ and _____ .

☞ Tick (✓) the correct shape for each :

12. The face of the blackboard *Triangle/Rectangle/Circle*

13. The face of your ruler *Triangle/Rectangle/Circle*

14. The face of the full moon *Triangle/Rectangle/Circle*

Exercise 13.4

☞ Draw line segments to join the points in order. Name the shape thus formed :

1. J • • M

2. P •

3. A •

B • • E

K • L • Q • • R C • D •

4. A • • D

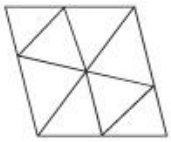
B • C •

5. E • • H

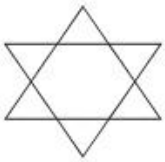
F • G •

☞ Write the numbers of triangles in each figure :

6.

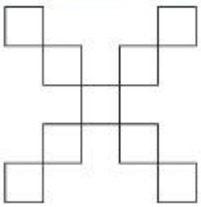


7.

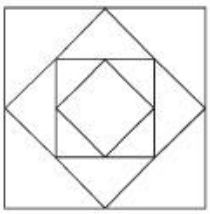


☞ Write the number of squares in each figure :

8.



9.

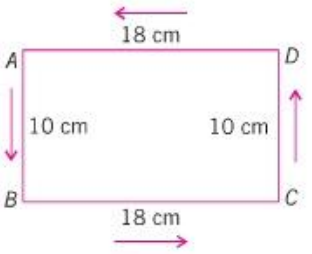


10. Draw a circle of 4.5 cm radius in your exercise book.

➲ Perimeter

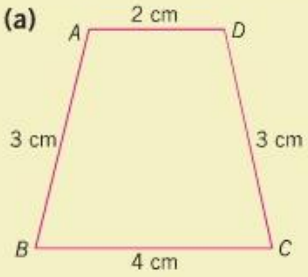
The perimeter of a figure is the sum of the length of all its sides. Perimeter of a quadrilateral is the sum of the lengths of its four sides.

Perimeter of a triangle is the sum of the lengths of its three sides. In the same way perimeter of pentagon and hexagon is the sum of their 5 and 6 sides respectively.

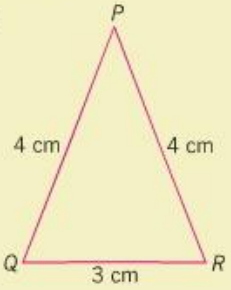


Example 1 : Find the perimeter of the following figures :

(a)



(b)

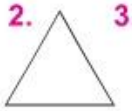
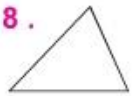


Solution : **(a)** $AB + BC + CD + DA = 3 + 4 + 3 + 2 = 12$ cm. Perimeter = 12 cm

(b) $PQ + QR + RP = 4 + 3 + 4 = 11$ cm, Perimeter = 11 cm

Exercise 13.5

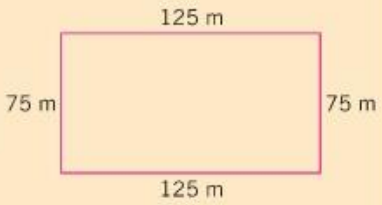
☞ Measure the sides and find the perimeter of each figure :

1.  **2.**  **3.**  **4.**  **5.**  **6.**  **7.**  **8.** 

Word Problems on Perimeter

Example 2 : Playing field of Manav's school is a rectangle, 125 m long and 75 m wide. He walks along its edge and takes one round. How far does he walk ?

Solution : Opposite sides of a rectangle are always equal. Hence, two sides are 125 m each and two sides are 75 m each.
Manav walks the perimeter of the rectangle
= Sum of its four sides
= 125 + 75 + 125 + 75 m = 400 m



Exercise 13.6

☞ Do these sums in your exercise book :

1. Shikhar's field is a rectangle, 300 m long and 100 m wide. If Shikhar runs right round its edge, then how far must he run ?

2. The sides of a playing field of my school are 200 m, 180 m, 170 m and 210 m respectively. A teacher walks right round its edges. How far does she walk in one round ?

3. A flower-bed is hexagon-shaped. Each side of it is 8 m long. How much long fencing is required to protect it ?

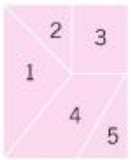
4. Three sides of a triangle are 6cm, 8cm and 10 cm respectively. Find its perimeter.

5. Mona's classroom is square-shaped. Each side of it is 5 m long. She takes a round of it along the walls. How far does she walk ?

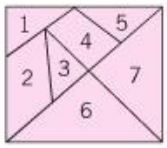
6. A carpet is 160 cm long and 90 cm broad. What is its perimeter ?

Tangram

The tangram is an old Chinese puzzle. It consists of a square broken up into various geometrical shapes. It can be of 5-pieces or 7-pieces. From the pieces of the tangram, we can make many shapes of animals, people and things.



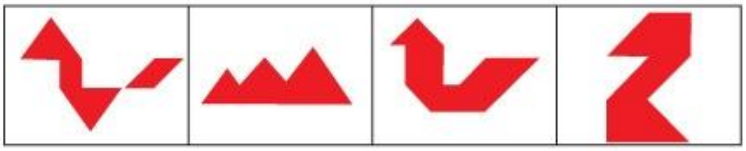
A 5-piece tangram with
3 triangles and 2 quadrilaterals.



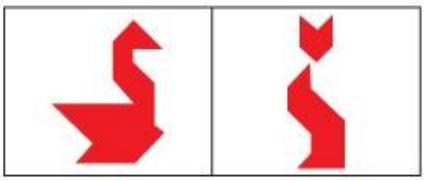
A 7-piece tangram with
5 triangles and 2 quadrilaterals.

Exercise 13.7

1. Cut out 5-piece tangrams and try to construct the shapes below :



2. Use 7-piece tangram puzzles to form the figures given below :



Chapter

14 Symmetry and Patterns

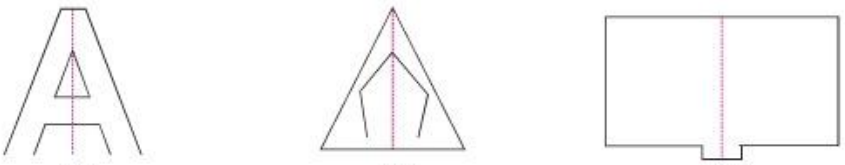
Learning Objectives :

❖ Symmetrical Shapes ❖ Patterns and Tessellations ❖ Patterns in Numbers

➲ Symmetrical Shapes

If a figure can be folded or divided into half so that two halves match exactly then such a figure is called a symmetrical figure.

Look at the pictures given below :



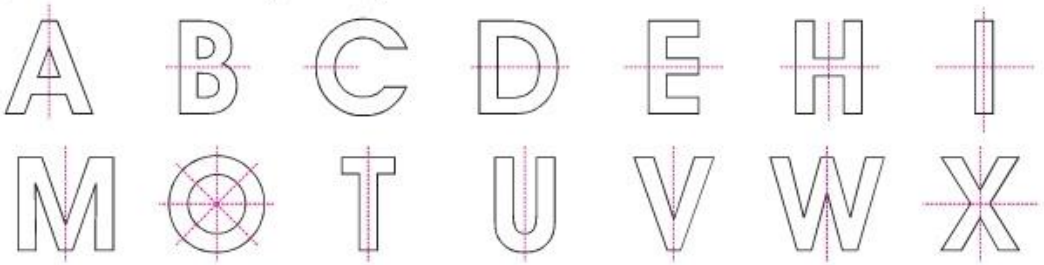
(i) (ii) (iii)

Fold the above figures along the dotted lines, one part exactly overlaps the other part, since both parts are equal. The line along which the figure is folded is called the line of symmetry. The line of symmetry can be horizontal, vertical or slanting and is also called a mirror line because if we place a mirror along it the figure looks exactly the same as the original.

Such figures are known as symmetric figures. The above three figures show symmetry in shapes.

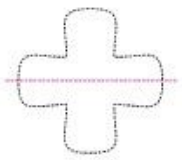
Symmetry in Letters

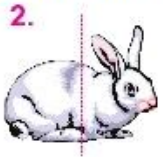
Some letters show symmetry.

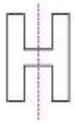


Exercise 14.1

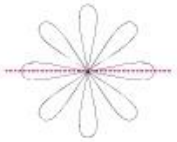
☞ Study the figures given below. Does the dotted line divide each picture into two similar halves ? Find which are not symmetric.

1. 

2. 

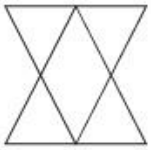
3. 

4. 

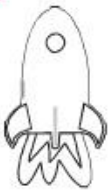
5. 

6. 

☞ Draw the line of symmetry for the following figures :

7. 

8. 

9. 

10. 

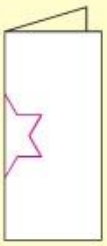
11. 

12. 

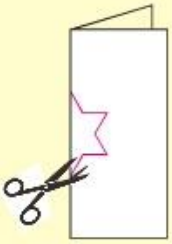
Learning By Doing

Take a sheet of paper and follow the instructions given below :

Fold on the dotted line.



Draw half a star on the folded edge.



Cut on the lines.

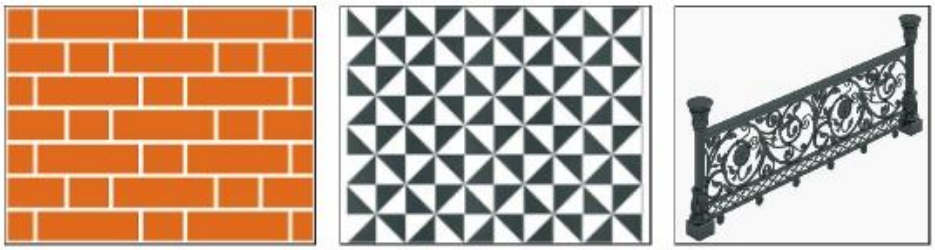
Open the folded paper.

Patterns and Tessellations

If one or more colours, shapes or numbers repeat themselves in the same order, it is called a pattern. In everyday life, we see many patterns. We see them in the grills of a window, in designs on carpets, curtains, bed sheets, tiles, etc. Some patterns are given below.

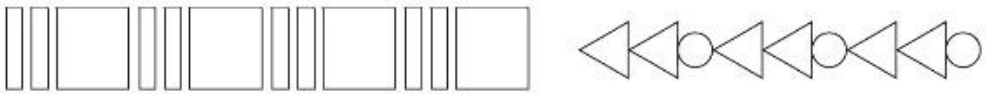
If any large shapes is completely fill with patterns of one or more smaller shapes so that there are no gaps and no two shapes overlap, it is called a tessellation.

We see examples of tessellations in the way bricks are arranged in a pattern on a wall or tiles are arranged on the floor. Railings on staircases and designs on gates are also tessellations.



➲ Patterns in Numbers

We may find the patterns in objects and numbers too. Geometrical patterns are made using various shapes such as square, circle, lines, rectangles, etc. A shape or a set of shapes repeats itself in pattern. The following are some examples :

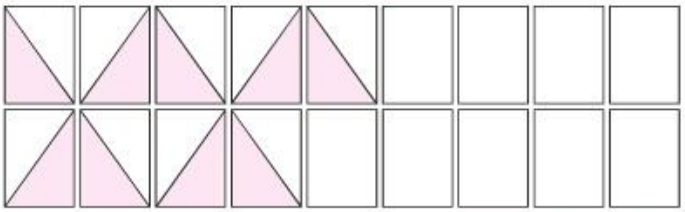


We can made patterns with numbers too. Like 31, 41, 51, ...

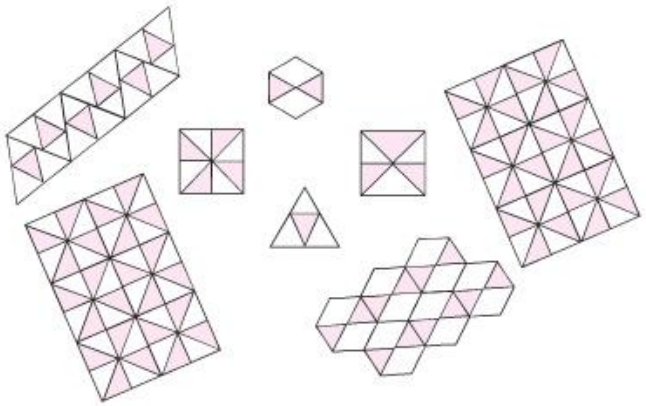
This is a growing pattern. It can go on and on. You can find the next numbers like 41, 51, 61, 71, 81, and so on.

Exercise 14.2

☞ Complete the following tiling pattern.



☞ Among the following can you match the tiles with the designs that they will make on the floor.



☞ Extend the following geometrical patterns to the next three places :

3. 

4. 

5. 

6. 

☞ Look for the rules and continue these growing patterns :

7. 6, _____ 18, 24, 30, _____ , _____ , _____
8. 2, 3, 6, 11, 18, _____ , _____ , _____
9. 31, 36, 41, 46, _____ , _____ , _____
10. 1, 3, 6, 10, _____ , _____ , _____

Chapter 15

Unit-VIII : Data Handling

Pictographs

Learning Objectives :

❖ Data ❖ Collecting Data Using Tally Marks ❖ Pictorial Representation of Data ❖ Interpretation of Data.

Data

In our daily life, we collect information everyday. Sometimes, information is collected to find out more about the choices of people. This collected information is called data.

Fact File

The process of collecting information is called a survey.

Collecting Data Using Tally Marks

Tally marks are a quick way of keeping track of numbers in groups of five. One vertical line is made for each of the first four numbers, the fifth number is represented by a slanting line across the previous four.

Count	Tally Marks	Count	Tally Marks
1	|	6	𝍸 |
2	||	7	𝍸 ||
3	|||	8	𝍸 |||
4	||||	9	𝍸 ||||
5	𝍸	10	𝍸 𝍸

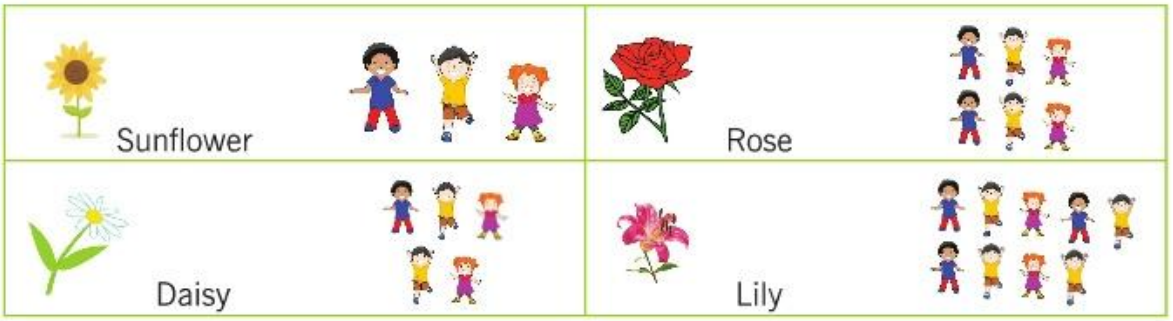
For example : Given below are the numbers of students playing different games. Show the data using tally marks.

Games	Count	Tally Marks
Football	4	||||
Badminton	11	𝍸 𝍸 |
Basketball	5	𝍸

Cricket	9	𝍸 ||||
Hockey	5	𝍸

Exercise 15.1

1. The picture shows the flowers liked by children in a class.



Record the data in the table below using tally marks :

S. No.	Flower	Tally Marks
1.	Sunflower	
2.	Rose	
3.	Daisy	
4.	Lily	

2. Count the number of apples and fill in the blanks :

S.No.	apples	Numbers	Tally Marks
1.	🍎🍎🍎	3	|||
2.	🍎🍎🍎🍎🍎		
3.	🍎🍎🍎🍎🍎🍎🍎🍎		
4.	🍎🍎🍎🍎🍎🍎		
5.	🍎🍎🍎🍎🍎🍎🍎🍎🍎🍎		

Pictorial Representation of Data

Pictograph is a pictorial representation of data for any given information. Data collected can be represented in the following ways :

Vehicle's Name	Cars	Buses	Scooters	Motor Cycles	Bicycles
Number	7	4	8	9	13

The above table shows information about the number of vehicles seen on the road in a particular hour.

The same information can be represented in the form of a pictograph as shown on next page.

Numbers of Vehicles	Seen on the road in a particular hour
7	
4	
8	
9	
13	

When The data is Large

Sometimes the data is large and it becomes difficult to draw so many figures. In such cases, we use a symbol or a picture to represent a specific number of objects.

Example 1 : Given below is the information about the flags brought by the students of various classes in a school on republic day.

Nursery	KG	First	Second	Third
35	30	20	25	35

Solution : Since it is difficult to draw so many figures, we use one figure  to represent 5 students. The above information can now be represented with the help of following pictograph.

Class Nursery	
Class KG	

Class I	
Class II	
Class III	

Exercise 15.2

☞ Number of patients in a hospital on each day of a certain week was as under :

Sunday	60	
Monday	50	
Tuesday	40	
Wednesday	40	
Thursday	50	
Friday	30	
Saturday	70	

Prepare a pictograph to represent the above data by choosing a suitable symbol to represent a certain number of patients.

☞ The data of number of students in each class in a school is as under :

Class Nursery	90	
Class KG	80	
Class I	70	
Class II	60	
Class III	50	

Prepare a pictograph to represent the above data by choosing a suitable symbol to represent a certain number of students.

Interpretation of Data

Example 2 : If one  represents 10 stamps, then answer the questions given on the following pictograph :

Ravi	
Rajni	
Cheenu	
Shilpi	
Sharad	
Mukesh	

Questions :

(a) Who collected the maximum stamps ?
(b) Who collected the minimum stamps ?
(c) Which two children collected the same number of stamps ?
(d) How many stamps did Cheenu and Shilpi collect altogether ?
(e) How many stamps did each child collect ?

Solution :

(a) Ravi collected the maximum stamps (70).
(b) Shilpi collected the minimum stamps (30).
(c) Sharad and Rajni collected the same number of stamps (40).
(d) Cheenu and Shilpi collected 90 (60 + 30) stamps altogether.
(e) The stamps each child collected were : Ravi 70, Rajni 40, Cheenu 60, Shilpi 30, Sharad 40 and Mukesh 50.

Exercise 15.3

Interpret the following pictographs and answer the questions given on each pictograph :

1.

Scooters	

Motorcycles	
Bicycles	
Maruti cars	
Indica cars	

Above is the pictograph of vehicles present in a parking in which one picture represents 5 vehicles.

Questions :

(a) How many vehicles of each kind are present in the parking ?

(b) Which kind of vehicles are present in the maximum number ?

(c) Which kind of vehicles are present in the minimum number ?

(d) How many cars—Maruti and Indica are present in the parking ?

(e) Find the difference in the numbers of scooters and motorcycles present in the parking.

2.

Class Nursery	
Class KG	
Class I	
Class II	
Class III	

Above is the pictograph of students present in class in one picture represent 10 students.

Questions :

(a) How many students are there in each class ?

(b) Which class has the maximum students ?

(c) Which class has the minimum students ?

(d) Which two classes have the same number of students ?

(e) Find the difference between the number of students in classes, Nursery and KG.

HALF YEARLY Test Paper

(Based on Chapter From 1 to 8)

Time : _____

Marks : _____

Note : All questions are compulsory.

1. Fill in the blanks :

(a) The sum of the place values of the digits of a numeral is called its _____ .

(b) When 1 is added to the greatest 3-digit number 999 the smallest _____ number is formed.

(c) _____ are all those numbers that can be put into pairs.

(d) In the fraction $\frac{4}{5}$, 4 is the _____ .

(e) In a division sum, the number to be divided is called the _____ .

2. Write '**True**' or '**False**' :

(a) Short form is also called standard form. _____

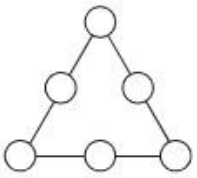
(b) 999 is the successor of 1000. _____

(c) The remainder is always greater than the divisor. _____

(d) 7 km = 7000 m _____

(e) There are three digits in a paise. _____

3. Can you solve this puzzle ? Write the numbers 1,2,3,4,5,6 in the circle, so that the sum of the numbers on each side of the figure is 12.



4. Mount Everest is 8848 m high. Mount Kanchenjunga is 8598 m high. How much higher is Everest than Kanchenjunga ? _____

5. Solve the following sums :

(a) Monika bought a raincoat for ₹ 143.25 and an umbrella for ₹ 85.75. She gave the shopkeeper 3 notes of one hundred rupee each. What did she get back ?

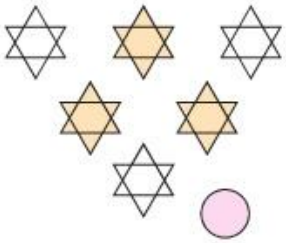
(b) There are 36 pearls in a necklace. How many pearls will be there in 176 such necklaces ?

(c) A soap factory produced 1879, 2301 and 2425 soap cakes in three days. How many soap cakes produced in all ?

(d) On Saturday, 1475 men, 309 women and 2787 children visited the Science Museum. How many people in all visited the museum on Saturday ?

(e) 4000 bananas were bought on Republic Day. If 3166 bananas were distributes, how many were left ?

6. Write the fraction of each collection that is shaded :

(a) 

(b) 

(c) 

7. Manu bought a chair for ₹ 1272.75, a table for ₹ 2170.50 and an almirah for ₹ 4507.75 How many rupees did she spend ? _____

8. Tick (✓) the correct answer : (Multiple Choice Questions)

(a) The fraction of unshaded part is ●○○ .

(i) $\frac{2}{3}$ ☐ (ii) $\frac{1}{3}$ ☐ (iii) $\frac{1}{2}$ ☐ (iv) $\frac{3}{2}$ ☐

(b) What is the value of 2 in 6,52,814 ?

(i) 20,000 ☐ (ii) 2,00,000 ☐

(iii) 2,000 ☐ (iv) 200 ☐

(c) 2 rupees equals :

(i) Four 50-paise ☐ (ii) Five 25-paise ☐

(iii) Ten 50-paise ☐ (iv) Nine 25-paise ☐

(d) The sum of 710 and 180 is _____ .

(i) 880 ☐ (ii) 890 ☐

(iii) 790 ☐ (iv) None of these ☐

(e) Third-grades students went to a theatre in 8 buses. Each bus took 45 students. How many students went to the theatre ?

(i) 320 ☐ (ii) 360 ☐ (iii) 380 ☐ (iv) 340 ☐

ANNUAL Test Paper

(Based on Chapter From 1 to 15)

Time : _____

Marks : _____

Note : All questions are compulsory.

1. Fill in the blanks :

(a) _____ hundreds make a thousand.

(b) _____ is the successor of 99.

(c) 9km 75m = _____ m.

(d) Opposite sides of a parallelogram are _____ and _____ .

(e) On joining two points with a ruler and extending endlessly on one side only, we get a _____ .

2. Write '**True**' or '**False**' :

(a) If a symbol is written to the left of one of greater value, we add its value to the value of the symbol of the left. _____

(b) The smallest number of four digits is the predecessor of the greatest number of three digits. _____

(c) When zero is added to a number, the sum is the number itself. _____

(d) A square is a rectangle but a rectangle is not a square. _____

(e) Perimeter of a triangle is the sum of the lengths of its three sides. _____

3. Solve the following sums :

(a) Radha read $\frac{11}{15}$ part of a book in one hour and Monu read $\frac{13}{15}$ part of the same book in one hour. Who read more and how much more ?

(b) There are 26 pearls in a necklace. How many pearls will be there in 176 such necklaces ?

(c) 5 metre of cloth costs ₹ 289.40. What is the cost of 1 metre cloth ?

(d) A fish tank can hold 31 L 420 mL water. If it is one quarter full, how much water is in the tank ?

(e) Raja's field is a rectangle 300 m long and 100 m wide. If Raja runs right round its edge, how far must he run ?

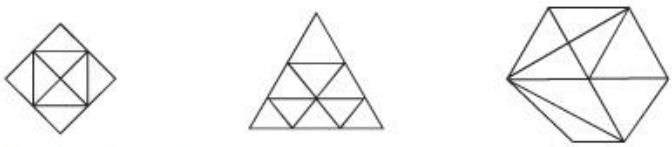
4. Fill in the blanks :

Read as	Written as	Read as	Written as
10 minutes past 7	7 : 10	30 minutes past 2	_____

23 minutes to 3	_____	_____	6 : 45
_____	8 : 15	Half past 9	_____

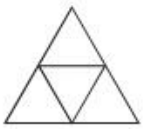
5. How Many ?

How many triangles are there in the following figures ?



6. Shade the given fraction.

(a) $\frac{5}{6}$ 

(b) $\frac{3}{4}$ 

(c) $\frac{7}{9}$ 

7.

Scooters	
Motorcycles	
Bicycles	
Maruti cars	
Indica cars	

Above is the pictograph of vehicles present in a parking in which one picture represents 5 vehicles.

Questions :

(a) Which kind of vehicles are present in the maximum number ?

(b) How many vehicles of each kind are present in the parking ?

(c) Which kind of vehicles are present in the minimum number ?

(d) Find the difference in the numbers of scooters and motorcycles present in the parking.

(e) How many cars: Maruti and Indica are present in the parking ?

8. Tick (✓) the correct answer: *(Multiple Choice Questions)* :

(a) The chart shows the number of pages Mansi read during four days.

Day	Monday	Tuesday	Wednesday	Thursday
Pages Read	24	17	31	26

How many more pages did Mansi read on Wednesday than on Tuesday ?

(i) 26 ☐ **(ii)** 16 ☐

(iii) 14 ☐ **(iv)** 24 ☐

(b) Rajiv has 8 baseball cards. He got some more baseball cards for his birthday, then he had 17 in all. How many baseball cards did he get for his birthday ?

(i) 7 ☐ **(ii)** 8 ☐

(iii) 6 ☐ **(iv)** 9 ☐

(c) Which of these shows the same time as the adjacent clock ?

(i) 12:15 ☐

(ii) 2:00 ☐

(iii) 12:23 ☐

(iv) 2:12 ☐

(d) If Ajay has baseball practice every fourth day in the month of March, starting with March 1, what date will be his last day of practice for the month ?

(i) March 28 ☐ **(ii)** March 29 ☐

(iii) March 30 ☐ **(iv)** March 31 ☐

(e) Monty drew models of fractions on the board and asked his students to compare them. Which example shows the fractions listed in order from greatest to least ?

(i) $\frac{2}{4}, \frac{4}{4}, \frac{1}{4}, \frac{3}{4}$ ☐ **(ii)** $\frac{4}{4}, \frac{3}{4}, \frac{1}{4}, \frac{2}{4}$ ☐

(iii) $\frac{4}{4}, \frac{3}{4}, \frac{2}{4}, \frac{1}{4}$ ☐ **(iv)** $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}$ ☐

Answersheet

Revision

1. (a) 239, 240, 241, 242, 243, 244, 245 (b) 445, 446, 447, 448, 449, 450, 451 (c) 579, 580, 581, 582, 583, 584, 585 (d) 700, 701, 702, 703, 704, 705, 706 2. (a) 200, 199, 198, 197, 196, 195, 194 (b) 352, 351, 350, 349, 348, 347, 346 (c) 585, 584, 583, 582, 581, 580, 579 3. (a) Two hundred sixty seven (b) Three hundred nine (c) Five hundred forty 4. (a) 727 (b) 890 (c) 505 5. 200, 321, 460, 700 6. 199, 300, 499, 749 7. 179, 400, 599 8. (a) 639, 640, 641, 642, 643, 644 (b) 945, 946, 947, 948, 949, 950 (c) 702, 701, 700, 699, 698, 697 (d) 900, 899, 898, 897, 896, 895 9. 6, 0, 9 10. (a) 379 (b) 755, 11. hundreds place, 600 12. 316, 317, 318, 319, 320 13. (a) > (b) > (c) < 14. 999 15. Sharad 16. 100 17. 121, 234, 241, 432 18. (a) 579 (b) 516 19. Mona Third, Roma First, Priya Second 20. 97 21. 14 22. (a) 33 (b) 3 (c) 76 (d) 90 (e) 485 (f) 841 23. (a) 99 (b) 896 (c) 84 (d) 860 24. (a) 25 (b) 294 (c) 194 (d) 605 (e) 976 (f) 321 25. 474 animals 26. 7 27. (a) 64 (b) 312 (c) 32 (d) 273 28. 258 29. (a) $7 \times 5 = 35$ (b) 8 (c) 1 (d) 0 (e) 150 (f) 600 (g) 210 30. (a) 63 (b) 328 (c) 884 (d) 980 31. 324 marbles 32. (a) 8 (b) 6 (c) 4 (d) 8 33. 8 crayons 34. (a) $\frac{2}{4}$ (b) $\frac{1}{4}$ (c) $\frac{3}{4}$ 35. (a) ₹ 35 25 p (b) ₹ 92 35 p (c) ₹ 64 10 p 36. ₹ 2 50 p 37. (a) 3 : 55 (b) 10 : 40 (c) 2 : 38 38. (a) Wednesday (b) Saturday (c) February (d) 7 (e) January (f) 12 39. (a) cm (b) m (c) L (d) mL (e) g (f) kg 40. (a) 7 m 76 cm (b) 34 m 90 cm (c) 35 m 64 cm 41. 21 m 10 cm 42. 900 mL 43. (a) 2 kg 425 g (b) 19 kg 81 g (c) 11 kg 55 g 44. 6 kg 900 g 45. (a) Square (b) Circle (c) Triangle (d) Rectangle. 46. (a) Curved (b) Plane (c) Plane.

1. 4-Digit Numbers

Exercise 1.1

1. 3172, Three thousand one hundred seventy two 2. 4312, Four thousand three hundred twelve 3. 4351, Four thousand three hundred fifty one 4. 6004, Six thousand four 5. 2770, Two thousand seven hundred seventy 6. 5615, Five thousand six hundred fifteen 12. 1207 13. 3025.

Exercise 1.2

1. One thousand two hundred ninety six 2. One thousand one hundred eleven 3. Two thousand nine hundred thirty 4. One thousand nine hundred twenty 5. Six thousand six hundred sixty six 6. Three thousand two hundred seventy four 7. Four thousand two hundred seventeen 8. Eight thousand nine 9. Seven thousand nine hundred eighty 10. Nine thousand ninety nine 11. Eight thousand four hundred ninety one 12. Nine thousand six hundred eighty six.

Exercise 1.3

1. 5891 2. 7890 3. 9527 4. 6886 5. 8967 6. 7120 7. 8080 8. 2356 9. 1505 10. 3046 11. 4774.

Exercise 1.4

1. 3500, 3501, 3502, 3503 2. 4029, 4030, 4031, 4032 3. 8297, 8298, 8299, 8300 4. 1592, 1593, 1594, 1595 5. 5678, 5679, 5680, 5681 6. 4699, 4698, 4697, 4696 7. 5670, 5669, 5668, 5667 8. 7901, 7900, 7899, 7898 9. 4001, 4000, 3999, 3998, 10. 4090, 4089, 4088, 4087 11. 99 12. 100 13. 999 14. 1000 15. 9999 16. 3699 17. 7999 18. 2349 19. 2600 20. 5000 21. 3480.

Exercise 1.5

1. 7000 + 200 + 30 2. 6000 + 9 3. 5000 + 600 + 20 + 4 4. 3000 + 500 + 9 5. 9000 + 500 + 20 + 7 6. 3000 + 8 7. 3000 + 700 + 2 8. 4000 + 500 + 90 + 8 9. 5 thousands 9 hundreds 7 tens 3 ones 10. 8 thousands 7 hundreds 1 ten 2 ones 11. 1 thousand 2 hundreds 6 tens 5 ones 12. 4 thousands 0 hundred 3 tens 8 ones 13. 3 thousands 0 hundred 5 tens 0 one 14. 4 thousands 0 hundred 0 ten 8 ones 15. 2 thousands 2 hundreds 2 tens 2 ones 16. 3 thousands 7 hundreds 0 ten 9 ones.

Exercise 1.6

1. 3802 2. 3575 3. 5656 4. 7030 5. 1489 6. 7224 7. 7259 8. 9120 9. 8907 10. 9001 11. 2305 12. 7058 13. 3770 14. 4273 15. 6543 16. 4050.

Exercise 1.7

1. 60 2. 800 3. 5 4. 40 5. 1000 6. 5 thousands 5 hundreds 5 tens = 5550 7. 5 thousands 5 tens 5 ones = 5055 8. 5 thousands 5 hundreds = 5500 9. 5 thousands 5 hundreds 5 tens 5 ones = 5555 10. 5 thousands 5 hundreds 5 ones = 5505 11. 3590 12. 8712 13. 2201 14. 4072 15. 1256 16. 8210 17. 450 18. 69, 5061, 2065.

Exercise 1.8

1. 1899, 1901, 1903, 1905, 1907 2. 5998, 6000, 6002, 6004, 6006 3. 1226, 1228, 1230, 1232, 1234 4. 3249, 3251, 3253, 3255, 3257 5. 3100, 3110, 3120, 3130, 3140 6. 4000, 4010, 4020, 4030, 4040 7. 2760, 2770, 2780, 2790, 2800 8. 2070, 2080, 2090, 2100, 2110 9. 2794, 2894, 2994, 3094, 3194 10. 6007, 6107, 6207, 6307, 6407 11. 2780, 2880, 2980, 3080, 3180 12. 4670, 4770, 4870, 4970, 5070 13. 3900, 4900, 5900, 6900, 7900 14. 5002, 6002, 7002, 8002, 9002, 15. 3020, 4020, 5020, 6020, 7020 16. 4536, 5536, 6536, 7536, 8536 17. 2436, 2446, 2456, 2466 18. 5056, 6056, 7056, 8056 19. 2168, 2169, 2170, 2171 20. 5684, 5784, 5884, 5984.

Exercise 1.9

1. > 2. < 3. > 4. > 5. > 6. < 7. > 8. > 9. > 10. < 11. > 12. < 13. > 14. > 15. < 16. 3010 17. 3740 18. 1008 19. 1299 20. 1199 21. 6215 22. 8924 23. 6610 24. 9991 25. 9999 26. 375, 1375, 3175, 7153 27. 2586, 4586, 5586, 5658 28. 1259, 1529, 1925, 1959 29. 2236, 2268, 2706, 2716 30. 2929, 9191, 9292, 9993 31. 5430, 4350, 3450, 345, 32. 7625, 6175, 2675, 1265 33. 7732, 7432, 7237, 2377 34. 6592, 2859, 2759, 2659 35. 4765, 4675, 4576, 4567.

Exercise 1.10

1. 1000, yes 2. 100, yes 3. 3568, 3658, 3865, 3856; 3568, 3658, 3856, 3865 4. ascending 5. ascending 6. descending 7. descending 8. no 9. yes 10. Gold Mary School.

Exercise 1.11

1. 2567 2. 3078 3. 2035 4. 2678 5. 7089 6. 2359 7. 1027 8. 2003 9. 2369 10. 1023 11. 9820 12. 9852 13. 8851 14. 9763 15. 9876 16. 7530 17. 6532 18. 5430 19. 9740 20. 8653 21. 121, 63, 249, 25 22. 38, 576, 810 23. 775, 557.

Let's Recall

1. 10 2. 100; 10 3. 1 4. It is smaller. 5. It increases. 6. 1 7. (a) 8. (a) 9. (a) 10. (b).

2. Indian Regional and Roman Numerals

Exercise 2

1. ✓ 2. ✓ 3. ✓ 4. × 5. × 6. ✓ 7. ✓ 8. × 9. × 10. × 11. XIII 12. XXI 13. VI 14. IX 15. XI 16. IV 17. XXXVII 18. XVII 19. XXV 20. XXXIX 21. XXVIII 22. XIX 23. 24 24. 26 25. 15 26. 16 27. 14 28. 4 29. 28 30. 39 31. 36 32. 33 33. 31 34. 29 35. XXXIX 36. XXI 37. XXV 38. X 39. III 40. IV 41. IV, 4; V, 5; IX, 9; XXI, 21; XVI, 16. XXIX, 29.

3. Addition

Exercise 3.1

1. 8958 2. 8888 3. 5999 4. 8879 5. 9859 6. 5877 7. 2288 8. 6968 9. 7667.

Exercise 3.2

1. 4304 2. 7225 3. 5319 4. 5700 5. 8377 6. 8744 7. 6112 8. 7111 9. 8200 10. 7140 11. 7590 12. 9021 13. 5311 14. 8030 15. 6792 16. 3804.

Exercise 3.3

1. 9130 2. 9710 3. 8534 4. 9685 5. 9757 6. 8198 7. 9419 8. 8020 9. 4301 10. 6890 11. 8162 12. 9347 13. 6924 14. 7502 15. 6336 16. 9021 17. 9019 18. 9435.

Exercise 3.4

1. 3025 2. 1330 3. 3215 4. 0 5. 4335 6. 1146, 1156, 1166, 1176, 1186,1196 7. 2447, 2547, 2647, 2747, 2847, 2947 8. 3079, 4079, 5079, 6079, 7079, 8079 9. 1245, 1255, 1265, 1275 10. 1482, 1582, 1682, 1782.

11. $\begin{array}{r} \boxed{3}150 \\ +36\boxed{8}9 \\ \hline 683\boxed{9} \end{array}$ 12. $\begin{array}{r} 4\boxed{4}76 \\ +51\boxed{6}6 \\ \hline 9642 \end{array}$ 13. $\begin{array}{r} \boxed{6}785 \\ +2\boxed{4}38 \\ \hline \boxed{9}22\boxed{3} \end{array}$ 14. $\begin{array}{r} \boxed{4}976 \\ 2346 \\ \hline 7\boxed{3}22 \end{array}$ 15. $\begin{array}{r} 3\boxed{4}65 \\ +\boxed{2}838 \\ \hline 6303 \end{array}$ 16. $\begin{array}{r} \boxed{4}8\boxed{2}6 \\ 269\boxed{7} \\ \hline 7523 \end{array}$

Exercise 3.5

1. 947 packets 2. 654 people 3. 2287 pencils 4. 1437 students 5. 1159 flowers 6. 4571 people 7. 7997 books.

Exercise 3.6

1. 73, 50, 30, 80 2. 81, 30, 60, 90 3. 73, 60, 10, 70 4. 100, 20, 80, 100 5. 87, 60, 30, 90 6. 74, 50, 30, 80.

Let's Recall

1. Addition is finding the sum or total by combining two or more numbers. 2. addends, sum or total 3. If zero is added to a number, the sum is the number itself. 4. 1 5. 10 6. 10 7. (b) 8. (c) 9. (a).

4. Subtraction

Exercise 4.1

1. 1101 2. 2221 3. 3312 4. 6420 5. 2131 6. 1803 7. 1102.

Exercise 4.2

1. 903 2. 6469 3. 1558 4. 7259 5. 878 6. 804 7. 2579 8. 2731 9. 2313 10. 2063 11. 199 12. 3667 13. 2009 14. 2377 15. 4019 16. 364 17. 1111 18. 1404 19. 3001 20. 3268 21. 1220 22. 2059 23. 569 24. 138 25. 1733 26. 1333 27. 1546 28. 937.

Exercise 4.3

1. 969 2. 3611 3. 2559 4. 1779 5. 2841 6. 3196 7. 1563 8. 1475 9. 976 10. 2201 11. 926 12. 4863 13. 3836 14. 1938 15. 3893.

Exercise 4.4

1. 2492 2. 1388 3. 2264 4. 1631 5. 2959 6. 1397 7. 5103 8. 5983 9. 8866 10. 2059.

11. 7506 − 3458 = 4048

12. 532 − 114 = 418

13. 4136 − 2217 = 1919

14. 2497 − 1385 = 1112

15. 5049 − 3203 = 1846

16. 6800 − 1420 = 5380

17. 8739 − 5418 = 3321

18. 6544 − 2542 = 4002

19. 3284 − 2127 = 1157

Exercise 4.5

1. 802 bottles 2. 1747 people 3. 1 4. 834 apples 5. 222 seats 6. 1546 girls 7. 250 m 8. 1702 bags.

Exercise 4.6

1. 30 2. 30 3. 140 4. 450 5. 170 6. 260 7. 390 8. 220.

Let's Recall

1. Subtraction is an arithmetic operation that represents the operation of removing objects from a collection. 2. The number from which we subtract. 3. The number that is subtracted 4. The number itself 5. zero 6. (c) 7. (c) 8. (d).

5. Multiplication

Exercise 5.1

1. (a) 72 (b) 84 (c) 91 (d) 72 (e) 119 (f) 112 (g) 4 (h) 7 (i) 5 2. 128 balls 3. 75 stories 4. 96 bananas 5. 135 desks 6. 119 books.

Exercise 5.2

1. 175 2. 336 3. 170 4. 152 5. 320 6. 294 7. 165 8. 216 9. 888 10. 8846 11. 399 12. 884 13. 2092 14. 1585 15. 6996 16. 567 17. 5192 18.7011 19. 8361 20. 8393 21. 9552 22. 7902 23. 8864 24. 9972.

Exercise 5.3

1. 8448 2. 7992 3. 8420 4. 7595 5. 8628 6. 7308 7. 8883 8. 7890 9. 8876 10. 8910 11. 7671 12. 9730 13. 9618 14. 8976 15. 6144 16. 9513 17. 7002 18. 9950 19. 9264 20. 5125.

Exercise 5.4

1. 48 2. 53 3. 1797 4. 0 5. 6000 6. 6860 7. 750 8. 960 9. 9100 10. 6400 11. 8000 12. 9000 13. 1800 14. 2800 15. 2500 16. 600 17. 6000 18. 6000 19. 9100 20. 8400 21. 6500 22. 8500 23. 9600 24. 7600.

Exercise 5.5

1. 1350 2. 4374 3. 1344 4. 1311 5. 8036 6. 1292 7. 5376 8. 3471.

Exercise 5.6

1. 6660 2. 3042 3. 4592 4. 3952 5. 4503 6. 5516 7. 4212 8. 4048 9. 9204 10. 9126 11. 7904 12. 7285 13. 4816 14. 8775 15. 9702 16. 5160 17. 7285 18. 9135 19. 9703 20. 7714 21. 9522.

Exercise 5.7

1. 1800 bottles 2. 8760 litres 3. 1000 students 4. 240 crayons 5. 2592 candles 6. 3200 apples 7. 9408 kg 8. 8736 hours 9. ₹ 9856 10. ₹ 9180 11. 9024 mangoes 12. 9360 balloons.

Let's Recall

1. Product 2. 10 3. 4, 5, 20 4. 24 5. 0 6. 64000 7. (b) 8. (c) 9. (a) 10. (c).

6. Division

Exercise 6.2

1. 17 R 1 2. 13 R 5 3. 30 R 1 4. 27 R 2 5. 8 R 5 6. 8 R 3 7. 7 R 8 8. 17 R 1 9. 9 R 2 10. 12 R 4 11. 9 R 2 12. 11 R 4 13. 8 R 1 14. 9 R 4 15. 9 R 2 16. 13 R 3 17. 12 R 1 18. 27 R 1 19. 19 R 4 20. 7 R 7 21. 12 R 5 22. 12 R 5 23. 23 R 3 24. 10 R 6.

Exercise 6.3

1. 216 2. 185 3. 80 R 8 4. 105 R 1 5. 296 R 1 6. 177 R 1 7. 115 R 2 8. 95 R 3 9. 150 R 2 10. 128 R 4 11. 115 R 4 12. 145 R 2 13. 204 14. 109 15. 112 R 6 16. 76 R 6 17. 123 18. 160 R 2 19. 121 R 7 20. 152 R 4 21. 130 R 2 22. 91 R 1 23. 156 R 3 24. 136 R 1.

Exercise 6.4

1. 634 R 3 2. 331 R 5 3. 360 R 2 4. 774 R 2 5. 560 R 3 6. 731 R 4 7. 566 R 4 8. 625 9. 834 R 2 10. 772 R 6 11. 1303 R 1 12. 512 13. 963 R 1 14. 777 R 7 15. 2660 R 1.

Exercise 6.5

1. 0 2. 1638 3. 700 4. 357 5. 0 6. 58 7. 90 8. 0 9. 638 10. 4 11. 63 R 8 12. 813 R 4 13. 208 R 9 14. 341 R 0 15. 500 R 9.

Exercise 6.6

1. 52 R 5 2. 112 R 13 3. 53 R 7 4. 62 R 6 5. 374 R 11 6. 245 R 9 7. 390 R 4 8. 259 R 9 9. 559 R 11 10. 294 R 7 11. 402 R 12 12. 288 R 4 13. 251 R 2 14. 464 15. 487 R 7 16. 415 R 4 17. 463 R 12 18. 533 R 9 19. 367 R 1 20. 500 R 10.

Exercise 6.7

1. 28 beds 2. 127 benches 3. 273 packets 4 left 4. 625 students 5. 64 packets 6. 128 crayons each, 1 left 7. 514 bananas 8. 558 kg 9. 191 groups 10. 224 pages 11. 258 marbles 12. 167 litres.

Let's Recall

1. Division of two numbers is the process of calculating the number of times are number contained. 2. Dividend 3. We divide the things into two groups. 4. The number itself 5. less than 6. (a) 7. (a) 8. (a) 9. (a).

7. Common Fractions

Exercise 7.1

1. $\frac{1}{5}$ 2. $\frac{1}{9}$ 3. $\frac{1}{8}$ 4. $\frac{1}{7}$ 5. $\frac{1}{6}$.

Exercise 7.2

1. $\frac{3}{8}$ 2. $\frac{2}{5}$ 3. $\frac{2}{8}$ 4. $\frac{3}{7}$ 5. $\frac{5}{8}$ 6. $\frac{3}{6}$.

Exercise 7.3

1. $\frac{1}{6}$ 2. $\frac{2}{3}$ 3. $\frac{5}{7}$ 4. $\frac{3}{4}$ 5. $\frac{4}{9}$ 6. $\frac{3}{5}$ 7. $\frac{6}{7}$ 8. $\frac{7}{10}$ 9. $\frac{4}{11}$ 10. three-fifths 11. three-eighths 12. four-ninths 13. nine-tenths 14. six-sevenths 15. five-ninths 16. five-sixths 17. seven-tenths 18. five-sevenths 19. six-elevenths 20. $\frac{8}{11}$, eight-elevenths 21. $\frac{5}{6}$, five-sixths 22. $\frac{17}{30}$, seventeen-thirtieths 23. $\frac{91}{100}$, ninety one-hundredths 24. $\frac{241}{800}$, two hundred fortyone-eight hundredths.

Exercise 7.4

1. (a) $\frac{3}{6}$ (b) $\frac{4}{8}$ (c) $\frac{5}{12}$ 2. (a) $35 \div 7 = 5$ (b) $540 \div 9 = 60$ (c) $8 \div 2 = 4$ (d) $20 \div 5 = 4$ (e) $60 \div 4 = 15$ (f) $150 \div 3 = 50$ 4. $\frac{7}{24}$ 5. $\frac{5}{8}$ 6. $\frac{33}{50}$.

Exercise 7.5

1. 4; 3 2. 2; 5 3. 7; 8 4. 9; 6 5. 10; 2 6. 5; 8 7. $\frac{6}{11}$ 8. $\frac{4}{7}$ 9. $\frac{5}{9}$ 10. $\frac{6}{8}$.

Exercise 7.6

1. × 2. × 3. ✓ 4. × 5. ✓ 6. ✓ 7. $\frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20}, \frac{18}{24}$ 8. $\frac{12}{14}, \frac{18}{21}, \frac{24}{28}, \frac{30}{35}, \frac{36}{42}$ 9. $\frac{10}{16}, \frac{15}{24}, \frac{20}{32}, \frac{25}{40}, \frac{30}{48}$ 10. $\frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}, \frac{12}{18}$ 11. $\frac{8}{10}, \frac{12}{15}, \frac{16}{20}, \frac{20}{25}, \frac{24}{30}$ 12. 8 13. 1 14. 6 15. 45 16. 5 17. 7 18. 56 19. 28 20. 4 21. $\frac{8}{20}, \frac{4}{10}, \frac{2}{5}$ 22. $\frac{32}{64}, \frac{16}{32}, \frac{8}{16}$.

Exercise 7.7

1. $\frac{10}{13}$ 2. $\frac{1}{3}$ 3. $\frac{4}{5}$ 4. $\frac{19}{27}$ 5. $\frac{10}{17}$ 6. $\frac{5}{7}$ 7. $\frac{5}{12}$ 8. $\frac{4}{11}$ 9. $\frac{2}{7}$ 10. $\frac{14}{41}$ 11. $\frac{1}{4}$ 12. $\frac{5}{13}$ 13. < 14. > 15. < 16. < 17. > 18. > 19. > 20. < 21. > 22. $\frac{10}{11}, \frac{10}{17}, \frac{10}{19}, \frac{10}{21}$ 23. $\frac{13}{15}, \frac{11}{15}, \frac{8}{15}, \frac{7}{15}$ 24. $\frac{3}{11}, \frac{5}{11}, \frac{6}{11}, \frac{9}{11}$ 25. $\frac{3}{10}, \frac{3}{8}, \frac{3}{7}, \frac{3}{5}$ 26. Komal 27. Swati.

Exercise 7.8

1. 3, 1; 4 2. 5, 7; 12 3. 3, 4; 7 4. 3, 2; 5 5. $\frac{32}{38}$ 6. $\frac{8}{11}$ 7. $\frac{8}{17}$ 8. $\frac{13}{19}$ 9. $\frac{8}{9}$ 10. $\frac{33}{36}$ 11. $\frac{19}{22}$ 12. $\frac{21}{23}$ 13. $\frac{7}{10}$.

Exercise 7.9

1. 19; 8 2. 9; 16 3. 9, 5; 4 4. 4, 2; 2 5. $\frac{4}{21}$ 6. $\frac{3}{11}$ 7. $\frac{4}{10}$ 8. $\frac{12}{31}$ 9. $\frac{32}{100}$ 10. $\frac{5}{28}$ 11. $\frac{7}{35}$ 12. $\frac{6}{20}$ 13. $\frac{4}{14}$.

Exercise 7.10

1. $\frac{12}{16}$ metre 2. $\frac{15}{16}$ part of the book 3. $\frac{9}{10}$ part of the sweater 4. Tina, $\frac{2}{8}$ km 5. $\frac{5}{9}$ part of the money 6. Shiva, $\frac{2}{15}$ of the book 7. daughter, $\frac{2}{8}$ of property.

Let's Recall

1. denominator 2. Yes 3. four 4. (a) $\frac{1}{3}$ (b) $\frac{2}{8}$ (c) $\frac{3}{15}$ 5. two 6. numerator 7. (b) 8. (a) 9. (a).

8. Currency

Exercise 8.1

1. ₹ 4.05 2. ₹ 0.09 3. ₹ 9.90 4. ₹ 0.10 5. ₹ 9.75 6. ₹ 14.00 7. 1625 8. 9009 9. 2800 10. 8; 00 11. 1; 77 12. 10; 75 13. 27; 40 14. 43; 08 15. 48; 00.

Exercise 8.2

1. ₹ 37.15 2. ₹ 46.74 3. ₹ 29.27 4. ₹ 1191.08 5. ₹ 515.20 6. ₹ 325.82 7. ₹ 419.75 8. ₹ 696.50 9. ₹ 981.38.

Exercise 8.3

1. ₹ 137.25 2. ₹ 31.25 3. ₹ 23.20 4. ₹ 419.50 5. ₹ 7951 6. ₹ 611.50.

Exercise 8.4

1. ₹ 5.85 2. ₹ 2.55 3. ₹ 11.75 4. ₹ 8.25 5. ₹ 4.75 6. ₹ 5.50 7. ₹ 6.25 8. ₹ 542.75 9. ₹ 88.75 10. ₹ 126.65 11. ₹ 133.95 12. ₹ 146.90.

Exercise 8.5

1. ₹ 337.76 2. ₹ 95.50 3. ₹ 50.60 4. ₹ 30.25 5. ₹ 42.60 6. ₹ 38.90 7. ₹ 130.10 8. ₹ 187.50 9. ₹ 296.60 10. ₹ 5.50 11. ₹ 25.65 12. ₹ 94.65 13. ₹ 17.25 14. ₹ 94.65 15. ₹ 68.85 16. ₹ 41.95 17. ₹ 27.75 18. ₹ 86.45.

Exercise 8.6

1. ₹ 1.75 ballpen 2. ₹ 3.75 3. ₹ 3.75 4. ₹ 85.50 5. 155.25 6. ₹ 71 7. ₹ 29.50 8. ₹ 26.50 9. ₹ 34.50 10. ₹ 4.25 11. ₹ 151.75.

Exercise 8.7

1. ₹ 66.85 2. ₹ 72.30 3. ₹ 43.50 4. ₹ 43.50 5. ₹ 20.60 6. ₹ 71.20 7. ₹ 532.35 8. ₹ 291.20 9. ₹ 230.70 10. ₹ 3.00 11. ₹ 82.25 12. ₹ 330.40 13. ₹ 390.30 14. ₹ 119.40 15. ₹ 1837.20 16. ₹ 131.95 17. ₹ 237.51 18. ₹ 71.25 19. ₹ 62 20. ₹ 25.00 21. ₹ 102.50 22. ₹ 1958.00 23. ₹ 52.50 24. ₹ 257 25. ₹ 376.50.

Exercise 8.8

1. ₹ 27.80 2. ₹ 2.73 3. ₹ 1.05 4. ₹ 4.09 5. ₹ 5.58 6. ₹ 5.50 7. ₹ 9.20 8. ₹ 12.20 9. ₹ 4.75 10. ₹ 7.85 11. ₹ 37.62 12. ₹ 11.95 13. ₹ 9.20 14. ₹ 35.24 15. ₹ 1.95 16. ₹ 250.44; 0.04 17. ₹ 78.46; 0.04 18. ₹ 6.31; 0.02 19. ₹ 9.20, 0.06 20. ₹ 19.80 21. ₹ 7.19; 0.04 22. ₹ 83.75 23. ₹ 56.25 24. ₹ 6.75 25. ₹ 4.70 26. ₹ 256.64 27. ₹ 18.25 28. ₹ 7.50 29. ₹ 52.60 30. ₹ 156.50.

Let's Recall

1. ₹, P 2. two 3. Yes 4. No 5. ₹ 4 6. (c) 7. (a) 8. (a) 9. (c).

9. Clock and Calendar

Exercise 9.1

1. 7 : 55 2. 1 : 40 3. 5 : 40 4. 8 : 12 5. 3 : 37 6. 12 : 08.

Exercise 9.2

1. 25; 11 2. 5; 9 3. 35; 12 4. 55; 4 5. 40; 1 6. 15; 8 7. 45; 3 8. 45; 11 9. 50; 6 10. 51; 4 11. 55; 1 12. 35; 1.

Exercise 9.3

1. 6 : 25; 25 minutes past 6 2. 6 : 10, 10 minutes past 6 3. 6 : 15, quarter past six 4. 10 : 30; half past 10 5. 9 : 15; quarter past 9 6. 2 : 27; 27 minutes past 2 7. 10 : 15; quarter past 10 8. 5 : 55; 5 minutes to 6 9. 5 : 45, quarter to 6 10. 10 : 45; quarter to 11 11. 9:45; quarter to 10 12. 9 : 38; 22 minutes to 10.

Exercise 9.4

Read as	Written as	Read as	Written as
23 minutes to 3	2 : 37	quarter to 11	10 : 45
quarter past 8	8 : 15	quarter to 7	6 : 45
half past 4	4 : 30	17 minutes to 5	4 : 43
10 minutes past 7	7 : 10	30 minutes past 2	2 : 30
half past 9	9 : 30	35 minutes past 4	4 : 35

Exercise 9.5

1. at 9 : 00 o'clock 2. at 10 : 00 o'clock 3. at 6 : 00 o'clock 4. 45 minutes 5. 35 minutes 6. at half past 6.

Exercise 9.6

1. 1 : 30 am 2. 5 : 40 pm 3. 12 : 01 am 4. 11 : 45 pm 5. 12 : 30 pm 6. 5 : 45 am 7. 3 : 50 am 8. 5 : 00 am 9. 12 : 45 pm 10. 10 : 40 pm 11. 11 : 45 pm 12. 10 : 00 am 13. 5 : 30 am 14. 8 : 00 pm.

Exercise 9.7

1. 31 2. 29 3. 12 4. 4 5. 7 6. June 7. July 8. August 9. 29 10. January 11. December 12. 31 13. December 14. 365 15. June 16. 31 17. 28 18. July.

Exercise 9.8

1. January 4, 11, 18, 25; February 1, 8, 15, 22; March 1, 8, 15, 22, 29 2. (a) Sunday (b) Saturday (c) Saturday (d) Sunday 3. 4, 11, 18, 25 4. (a) 4 (b) 4 (c) 5.

Let's Recall

1. Tuesday 2. 7 5. August.

10. Measures of Length

Exercise 10.1

1. 710 2. 1800 3. 905 4. 115 5. 7589 6. 2535 7. 15; 10 8. 7; 2 9. 7; 70 10. 4; 69 11. 27; 5 12. 17; 15 13. 8068 14. 2805 15. 8700 16. 7000 17. 7009 18. 9075 19. 7; 210 20. 5; 50 21. 6; 200 22. 1; 980 23. 5; 4 24. 3; 7.

Exercise 10.2

1. 70 m 5 cm 2. 29 m 15 cm 3. 70 m 27 cm 4. 42 m 24 cm 5. 144 m 5 cm 6. 23 m 60 cm 7. 96 m 89 cm 8. 154 m 30 cm 9. 15 m 10 cm 10. 4 m 11. 73 m 50 cm.

Exercise 10.3

1. 78 km 315 m 2. 8 km 743 m 3. 62 km 241 m 4. 75 km 194 m 5. 10 km 279 m 6. 10 km 954 m 7. 12 km 10 m 8. 7 km 205 m 9. 431 km 450 m 10. 14 km 385 m.

Exercise 10.4

1. 3 m 40 cm 2. 1 m 75 cm 3. 38 m 89 cm 4. 12 m 85 cm 5. 7 m 59 cm 6. 7 m 50 cm 7. 90 cm 8. 16 m 58 cm 9. 51 m 49 cm 10. 13 m 74 cm 11. 6 m 70 cm 12. Jai, 10 cm 13. 5 m 85 cm 14. 6 m 45 cm 15. 20 cm.

Exercise 10.5

1. 73 km 922 m 2. 7 km 777 m 3. 18 km 148 m 4. 1 km 176 m 5. 5 km 995 m 6. 1 km 645 m 7. 1 km 618 m 8. 17 km 829 m 9. 4 km 77 m 10. 11 km 780 m 11. 1 km 875 12. 49 km 600 m.

Exercise 10.6

1. 91 m 80 cm 2. 76 m 68 cm 3. 72 m 54 cm 4. 70 m 20 cm 5. 19 m 50 cm 6. 386 m 25 cm 7. 61 m 8. 1626 m 80 cm 9. 1556 m 40 cm 10. 450 m 11. 2531 m 36 cm 12. 33 m 75 cm 13. 2006 m 25 cm 14. 2424 m 75 cm 15. 527 m 40 cm.

Exercise 10.7

1. 4 m 70 cm 2. 3 m 47 cm 3. 6 m 41 cm 4. 2 m 12 cm 5. 8 m 43 cm 6. 5 m 74 cm 7. 3 m 15 cm 8. 5 m 73 cm 9. 1 m 28 cm 10. 3 m 58 cm 11. 3 m 80 cm 12. 1 m 52 cm 13. 9 m 39 cm 14. 13 m 89 cm 15. 12 m 56 cm 16. 14 m 37 cm 17. 2 m 20 cm 18. 4 m 88 cm 19. 14 m 22 cm 20. 1 m 65 cm.

Let's Recall

1. (b) 2. (b) 3. (a) cm (b) cm (c) cm (d) cm (e) m (f) cm 5. 1000 cm.

11. Measures of Mass

Exercise 11.1

1. 2145 2. 4010 3. 9082 4. 6034 5. 8000 6. 5009 7. 7; 43 8. 9; 696 9. 9; 1 10. 4; 4 11. 3; 10 12. 2; 780 13. 8480 14. 3050 15. 9005 16. 6496

Exercise 11.2

1. 5 kg 470 g 2. 9 kg 760 g 3. 27 kg 710 g 4. 7 kg 97 g 5. 7 kg 370 g 6. 9 kg 429 g 7. 14 kg 365 g 8. 13 kg 735 g 9. 8 kg 945 g 10. 50 kg 56g 11. 48 kg 850 g 12. 7 kg 630 g 13. 3 kg 830 g 14. 5 kg 550 g 15. 11 kg 910 g

Exercise 11.3

1. 2 kg 370 g 2. 10 kg 432 g 3. 7 kg 795 g 4. 3 kg 795 g 5. 1 kg 87 g 6. 1 kg 229 g 7. 3 kg 479 g 8. 5 kg 620 g 9. 1 kg 970 g 10. 1 kg 625 g 11. 18 kg 480 g 12. 4 kg 945 g 13. 2 kg 275 g

Exercise 11.4

1. 71 kg 104 g 2. 8 kg 625 g 3. 12 kg 450 g 4. 28 kg 329 g 5. 58 kg 410 g 6. 10 kg 50 g 7. 3 kg 255 g 8. 18 kg 720 g 9. 19 kg 116 g 10. 42 kg 680 g 11. 12 kg 132 g 12. 26 kg 100 g 13. 3 kg 824 g 14. 1kg 950 g 15. 11 kg 880 g

Exercise 11.5

1. 1 kg 247 g 2. 1 kg 227 g 3. 752 g 4. 1 kg 717 g 5. 1 kg 539 g 6. 1 kg 144 g 7. 1 kg 323 g 8. 1 kg 737 g 9. 1 kg 534 g 10. 2 kg 375 g 11. 5 kg 589 g 12. 1 kg 563 g 13. 795 g 14. 1 kg 600 g 15. 1 kg 189 g

Let's Recall

1. Kilogram 5. Metric ton

12. Measures of Capacity

Exercise 12.1

1. 6080 2. 5120 3. 7009 4. 8329 5. 6; 70 6. 5; 9 7. 7; 345 8. 4; 805 9. 4220 10. 7005 11. 5128 12. 5070 13. 5; 9 14. 7; 50 15. 5; 230 16. 4; 239

Exercise 12.2

1. 6 L 558 mL 2. 8 L 429 mL 3. 28 L 060 mL 4. 14 L 168 mL 5. 7 L 20 mL 6. 8 L 945 mL 7. 5 L 410 mL 8. 10 L 370 mL 9. 14 L 365 mL 10. 48 L 870 mL 11. 50 L 56 mL 12. 9 L 525 mL 13. 22 L 120 mL 14. 13 L 800 mL 15. 15 L 100 mL

Exercise 12.3

1. 1 L 230 mL 2. 1 L 795 mL 3. 5 L 620 mL 4. 2 L 370 mL 5. 1 L 970 mL 6. 3 L 479 mL 7. 1 L 85 mL 8. 2 L 825 mL 9. 6 L 920 mL 10. 1 L 825 mL 11. 7 L 795 mL 12. 3 L 550 mL 13. 3 L 400 mL 14. 2 L 875 mL 15. 33 L 750 mL

Exercise 12.4

1. 16 L 680 mL 2. 13 L 590 mL 3. 15 L 075 mL 4. 58 L 410 mL 5. 28 L 005 mL 6. 15 L 450 mL 7. 1 L 925 mL 8. 12 L 176 mL 9. 43 L 225 mL 10. 50 L 640 mL 11. 21 L 500 mL 12. 2 L 120 mL

Exercise 12.5

1. 1 L 372 mL 2. 937 mL 3. 1 L 847 mL 4. 1 L 430 mL 5. 2 L 309 mL 6. 1 L 289 mL 7. 1 L 775 mL 8. 1 L 696 mL 9. 1 L 323 mL 10. 1 L 250 mL 11. 1 L 496 mL 12. 1 L 325 mL 13. 375 mL

Let's Recall

1. 1 litre = 1000 millilitre 2. 4 3. litre 4. millilitre 7. 4

13. Lines and Plane Figures

Exercise 13.1

1. ray 2. line 3. line segment, 4. line 5. ray 6. ray 10. two 11. no; no 12. a; no 13. many 14. a; an 15. two 16. no 17. one 18. Point : *R, M, N, L*; Line segments : *RM, MN, NL, LR*. 19. Points : *P, Q, R*; Line segments : *PQ, QR, RP* 20. Points : *A, B, C, D*; Line segments : *AB, CD*

Exercise 13.3

1. circle 2. parallelogram 3. square 4. triangle 5. rectangle 6. sides : no; 4; 3; 5; 6 vertices : no; 4; 3; 5; 6; 7. side; vertex 8. Opposite 9. 4 10. more 11. equal; parallel 12. rectangle 13. rectangle 14. circle

Exercise 13.4

1. square 2. triangle 3. pentagon 4. parallelogram 5. rectangle 6. 10 7. 8 8. 9 9. 4

Exercise 13.6

1. 800 m 2. 760 m 3. 48 m 4. 24 cm 5. 20 m 6. 500 cm

14. Symmetry and Patterns

Exercise 14.1

1. 2, 4 and 6 are not symmetrical.

Exercise 14.2

7. 12, 36, 42, 48 8. 27, 38, 51 9. 51, 56, 61, 66 10. 15, 21, 28

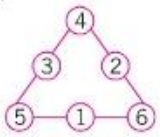
15. Pictographs

Exercise 15.3

1. (a) scooters = 35, motorcycles = 50, bicycles = 70, Maruti cars = 30, Indica cars = 25 (b) bicycles (c) Indica cars (d) 55 (e) 15 2. (a) Nursery = 70, KG = 60, I = 50, II = 50, III = 40 (b) class nursery (c) class III (d) class I and class II (e) 10

Half-Yearly Test Paper

1. (a) expanded form, (b) four-digit, (c) Even numbers (d) numerator (e) dividend; 2. (a) True, (b) False, (c) False, (d) True, (e) False,

3. 

4. 250 m 5. (a) 71 (b) 6336 (c) 6605 soap cakes, (d) 4571 people (e) 834 bananas 6. (a) $\frac{3}{6}$, (b) $\frac{4}{8}$, (c) $\frac{5}{12}$; 7. ₹ 7951 8. (a) (i) (b) (iii) (c) (i) (d) (ii) (e) (ii)

Annual Test Paper

1. (a) 10 (b) 100 (c) 9075 m (d) equal, parallel (e) ray 2. (a) False, (b) False, (c) True, (d) True, (e) True; 3. (a) Monu, $\frac{2}{15}$, (b) 4576 pearls, (c) ₹ 57.88 (d) 7 L 855 mL; (e) 800 m, 4. First Line : 2 : 30, Second Line : 2 : 37, quarter to 7, Third line : quarter past 8, 9 : 30; 5. 12, 11, 14 6. Do yourself 7. (a) bicycles, (b) Scooters = 35, motorcycles = 50, bicycles = 70, maruti cars = 30, indica cars = 30, (c) maruti cars, indica cars (d) 15; (e) 60 8. (a) (iii), (b) (iv), (c) (i), (d) (i) (e) (iii)