4

Terms of Subtraction

When we take away a number from the given amount it is called subtraction and the answer we get is called the difference.

Subtrahend : The number which is to be subtracted is called subtrahend.

Minuend : The number from which the subtrahend is subtracted is called as minuend.

Difference : When the subtrahend is subtracted from the minuend, the result is known as difference.

For Example :

Th	H	T	O	
7	6	9	8	← minuend
− 1	3	5	3	← subtrahend
6	3	4	5	← difference

Properties of Subtraction

1. The difference of a number and zero (0) is the number itself.

   For Example :

   $$82 - 0 = 82; \qquad 498 - 0 = 498;$$
   $$8868 - 0 = 8868; \qquad 9874 - 0 = 9874 \text{ etc.}$$

2. The difference of a number itself is zero (0).

   For Example :

   $$89 - 89 = 0; \qquad 497 - 497 = 0;$$
   $$4027 - 4027 = 0; \qquad 8468 - 8468 = 0 \text{ etc.}$$

Subtraction of 4-digit Numbers (Without Borrowing)

Example I : Subtract 4453 from 7698.

Solution :

Step 1 : Arrange the numbers in columns correctly.

Step 2 : Subtract the ones.

8 ones – 3 ones = 5 ones

Write 5 in the ones column.

Step 3 : Subtract the tens.

9 tens – 5 tens = 4 tens

Write 4 in the tens column.

Step 4 : Subtract the hundreds.

6 hundreds – 4 hundreds = 2 hundreds

Write 2 in the hundreds column.

Step 5 : Subtract the thousands.

7 thousands – 4 thousands = 3 thousands

Write 2 in the thousands column.

Therefore, 7698 – 4453 = 3245.

Th	H	T	O
7	6	9	8
– 4	4	5	3
3	2	4	5

Exercise 4.1

1. **Subtract the following.**

a.

Th	H	T	O
6	8	9	6
– 4	2	5	3

b.

Th	H	T	O
6	8	5	4
– 3	3	4	2

c.

Th	H	T	O
7	8	9	6
– 5	2	6	3
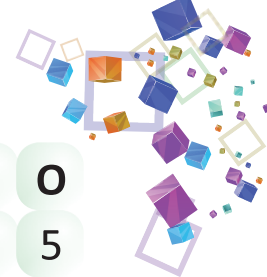
d.

Th	H	T	O
7	6	6	3
− 3	3	4	2

e.

Th	H	T	O
	8	8	4	3
− 6	3	3	1

f.

Th	H	T	O
	6	8	4	5
− 4	5	2	3

2. Arrange the following in columns and subtract.

a. 3834 from 4958

Th	H	T	O
−			

b. 2476 from 6798

Th	H	T	O
−			

c. 3462 from 4898

Th	H	T	O
−			

d. 7260 from 8482

Th	H	T	O
−			

e. 4332 from 6768

Th	H	T	O
−			

f. 2344 from 3668

Th	H	T	O
−			

Subtraction of 4-digit Numbers (With Borrowing)

Example II : Subtract 3868 from 7732.

Solution :

Step 1 : Arrange the given numbers in columns correctly.

Step 2 : Subtract the ones.

Since 8 > 2, hence, borrow 1 ten from 3 tens. Then 1 ten + 2 ones = 12 ones and subtract 12 ones − 8 ones = 4 ones.

Write 4 in the ones column.

Step 3 : Subtract the tens.

Since, 6 > 2, hence, borrow 1 hundred from 7 hundreds.

Then 1 hundred + 2 tens = 12 tens and subtract 12 tens – 6 tens = 6 tens.

Th	H	T	O
6	16	12	12
~~7~~	~~7~~	~~3~~	~~2~~
– 3	8	6	8
3	8	6	4

Write 6 in the tens column.

Step 4 : Subtract the hundreds.

Since 8 > 6, hence, borrow 1 thousand from 7 thousands, then 7 thousands become 6 thousands.

Then, 1 thousand + 6 hundred = 16 hundreds.

Now, subtract 16 hundreds – 8 hundreds = 8 hundreds.

Write 8 in the hundreds column.

Step 5 : Subtract the thousands.

6 thousands – 3 thousands = 3 thousands

Write 8 in the thousands column.

Therefore, 7732 – 3868 = 3864.

Example III : Fill in the blanks.

Th	H	T	O
	3		
– 4			
3		6	

Th	H	T	O
7	3	9	
– 4			
3	1	6	3

Solution :

Step 1 : In the box ☐ of the answer, write the difference of higher and lower digits for ones, 4 ones – 3 ones = 1 ones.

Step 2 : In the box ⬚ of minuend, write the sum of the lower and answer digits, i.e. for tens, 6 tens + 3 tens = 9 tens.

Step 3 : In the box ⬚ of subtrahend, write the difference of higher and answer digits, i.e. for hundreds, 3 – 2 = 1 hundred.

Step 4 : In the box ⬚ of minuend, write the sum of the lower and answer digits, i.e. for thousands, 3 + 4 = 7 thousands.

Exercise 4.2

1. Regroup and fill in the blanks.

a. 4 hundreds 2 tens 6 ones = ... hundreds 12 tens .... ones

b. 8 hundreds 9 tens = 7 hundreds .... tens

c. 6 thousands 3 hundreds = ... thousands 13 hundreds

d. 7 tens 8 ones = ... ten 18 ones

2. Find the difference of the following.

a.

Th	H	T	O
4	6	9	4
– 3	4	2	8

b.

Th	H	T	O
5	6	9	8
– 2	4	6	9

c.

Th	H	T	O
7	8	2	4
– 6	5	8	7

3. Arrange the following in columns and subtract.

a. 3468 from 4988

Th	H	T	O
–			

b. 1648 from 3673

Th	H	T	O
–			

c. 4328 from 6834

Th	H	T	O
–			

4. Fill in the blanks in the following.

a.

Th	H	T	O
6		7	
−		4	6	3
2	4		5

Note: row 2 — Th blank, H=4, T=6, O=3

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

b.

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

c.

Th	H	T	O
	8		7
2		3	6
3	3	6	

Easy to Subtract

Shortcut Method 1

We can subtract two numbers mentally. For this, we add or subtract a number to/from the given numbers and convert them into numbers ending with zero, which are easy to subtract.

Example IV: Subtract 498 from 766.

Solution :

Step 1 : Write the given numbers in the columns correctly.

Step 2 : Make the number to be subtracted into a number ending with zero.

The number is 498, so 498 + 2 = 500.

Step 3 : Add 2 to 766 also, i.e. 766 + 2 = 768.

Step 4 : Do the subtraction as 768 − 500 = 268.

Adding or subtracting the same number to/from both the numbers does not change the difference.

H	T	O
1	15	16
2̶	5̶	6̶
1	9	9
0	5	7

+1→
+1→

H	T	O
2	5	7
− 2	0	0
0	5	7

Answer : 57

Sometimes to make the subtraction easier, we may need to subtract a number.

Let us see.

Th	H	T	O
2	4	7	5
− 1	0	3	4
1	4	4	1

$-1 \rightarrow$
$-1 \rightarrow$

Th	H	T	O
2	4	7	4
− 1	0	3	3
1	4	4	1

Answer : 1441

Shortcut Method 2

We can use the concept of place value by writing the numbers in the expanded form to carry out subtraction quickly and easily.

The number, which is to be subtracted (subtrahend), is written in the expanded form. Then each number of the expanded form is subtracted separately.

Example V   : Subtract 84 from 96.

Solution   :

Step 1   : Expand the number to be subtracted,

   i.e. $84 = 80 + 4$.

Step 2   : First subtract 80 and then 4.

   $96 - 80 = 16 - 4 = 12$

Answer   : 12

Shortcut Method 3

Another way to find the difference of two numbers is to count on ahead of the smaller number.

Example VI   : Subtract 48 from 76.

Solution   :

Step 1   : Choose the smaller number, i.e. 48.

Step 2   : Count all the tens to reach the bigger number, i.e. 76.

$48 \rightarrow 50$

$50 \rightarrow 60$

$60 \rightarrow 70$

$70 \rightarrow 76$

Step 3   : Write the difference between each pair.

$48 \rightarrow 50$ $= 2$

$50 \rightarrow 60$ $= 10$

$60 \rightarrow 70$ $= 10$

$70 \rightarrow 76$ $= 6$

Step 4   : Add all the differences. $2 + 10 + 10 + 6 = 28$

So, $76 - 48 = 28$.

Exercise 4.3

1.   **Solve each of the following.**

a.

H	T	O
7	8	9
− 3	6	8

b.

H	T	O
8	6	4
− 3	3	2

c.

H	T	O
7	6	5
− 4	4	9

d.

Th	H	T	O
8	9	8	2
− 2	8	4	9

e.

Th	H	T	O
5	7	4	4
− 3	8	2	4

f.

Th	H	T	O
8	0	4	2
− 4	8	2	8

2. **Subtract the following by using the shortcut method 1.**

   a.   634 – 421   b.   847 – 498   c.   7999 – 4811

3. **Subtract each of the following by writing the subtrahend in the expanded form.**

   a.   78 – 34   b.   46 – 23   c.   94 – 76   d.   64 – 36

Subtraction Facts

When two numbers are added, we get a sum. The difference between the sum and any of the two numbers is the other number added.

For Examples :

   1.   If 482 + 349 = 831, then

       831 – 482 = 349 and 831 – 349 = 482.

   2.   If 7083 + 2462 = 9545, then

       9545 – 7083 = 2462 and 9545 – 2462 = 7083 etc.

For each addition fact, we get two subtraction facts.

Checking Subtraction by Addition

Example VII : Subtract 3228 from 4326 and check the answer by addition.

Solution :

Th	H	T	O
	2	11	16
4	3	2	6
– 3	2	2	8
1	0	9	8

Th	H	T	O
	1	1	
1	0	9	8
+ 3	2	2	8
4	3	2	6

The difference of 4326 and 3228 is 1098.

If we add this difference to 3228, we get 4326.

So, our answer is correct.

Doing Addition and Subtraction Together

When we have a sum which involves both addition and subtraction, we solve it step by step. First we add and then we subtract.

Example VIII : Solve $346 - 346 + 438$.

Solution :

Step 1 : First we add the numbers with '+' or no sign before them.

Step 2 : From the sum, we subtract the number with the '−' sign before it.

Therefore, $346 - 346 + 438 = 436$.

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

	H	T	O
		7	14
	7	8	4
−	3	4	6
	4	3	8

Example IX : Solve: $4464 + 3774 - 2188$.

Solution :

Step 1 : First we add 4464 and 3774.

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

Step 2 : From the sum 8238, we subtract 2188.

	Th	H	T	O
		2	13	
	8	2	3	8
−	2	1	8	8
	6	0	5	0

Therefore, $4464 + 3774 - 2188 = 6050$.

Exercise 4.4

1. **For each of the following addition facts, write two subtraction facts.**

   a. $426 + 343 = 769$

   ....

   ....

   b. $692 + 246 = 938$

   ....

   ....

c.	$3742 + 4968 = 8710$	d.	$3654 + 3325 = 6979$

....		....

....		....

2. Subtract each of the following and check the answers by addition.

a.

H	T	O
3	9	8
− 1	5	6

H	T	O
+ 1	5	6

b.

H	T	O
7	5	0
− 5	8	4

H	T	O
+ 5	8	4

c.

Th	H	T	O
4	3	6	0
− 2	4	8	5

Th	H	T	O
+ 2	4	8	5

d.

Th	H	T	O
9	4	0	0
− 5	4	4	6

Th	H	T	O
+ 5	4	4	6

3. Solve the following in your notebook.

a.	$2384 + 7346 − 4969$

b.	$4808 − 3464 + 4402$

c.	$3738 − 2408 + 2648$

d.	$3637 + 6229 − 4864$

Word Problem

Example X : Manish has monthly income of ₹ 7880 and his monthly expenditure is ₹ 5440. How much does he save ?

Solution : Total monthly income = ₹ 7880

Total expenditure = ₹ 5440

Therefore, total monthly saving

= (7880 − 5440) = ₹ 2440.

Answer : ₹ 2440

Th	H	T	O
7	8	8	0
− 5	4	4	0
2	4	4	0

Example XI : The population of a town is 9000. There are 4000 men and 2640 women in the town. How many children are there in the town ?

Solution : Number of men = 4000

Number of women = 2640

Total number of men & women

= 4000 + 2640 = 6640

Population of the village = 9000

Total number of men and women

= 6640

Therefore, number of children

= 9000 − 6640 = 2360.

Answer : 2360 men

Th	H	T	O
	4	0	0	0
+ 2	6	4	0
6	6	4	0

Th	H	T	O
8	9	10	
9	0	0	0
− 6	6	4	0
2	3	6	0

Exercise 4.5

1. Calculate the difference between 9686 and 6234.

2. Sandesh is going on a journey of 6478 km. If he has travelled 3678 km then how much his journey is still left ?

3. The sum of two numbers is 8489. One of the number is 7248. What is the other number ?

4. There were 8963 soldiers in camp A. If 7428 soldiers went to another camp B, then how many soldier are left in camp A ?

5. These are 3683 workers in a factory. On a rainy day, 1928 workers were absent. How many workers were present ?

6. Find the difference between 5876 and the sum of 3870 and 3654.

7. Subtract 4764 from the sum of 4328 and 2748.

8. What number should be added to 4629 to get 6849 ?

Points to Remember

❖ The answer to a subtraction sum is called the difference.

❖ There are some shortcut methods to subtract numbers, such as
   ○ by adding or subtracting numbers to/from both the numbers of which the difference is to be found,
   ○ place value method and
   ○ counting on method.

❖ For every addition fact, there are 2 subtraction facts.
   E.g. : for 3 + 6 = 9; we have 9 − 3 = 6 and 9 − 6 = 3 as two subtraction facts.

❖ We can check subtraction by using suitable addition.

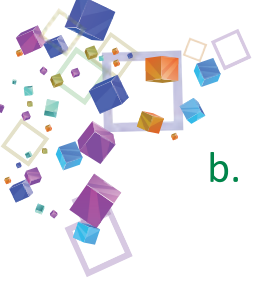❖ We must use the problem solving steps to solve word problems.

EXERCISE

1. Multiple Choice Questions (MCQs)

Tick (✔) the correct option :

a. On simplifying 2768 + 6987 − 4986, we get ....

   (i)   4749   (ii)   4769

   (iii) 4669   (iv) none of these

b. 8 thousands 6 hundreds is the same as .... thousands 16 hundreds.

(i)   8   (ii)   7

(iii) 6   (iv) 5

c. The number which is to be subtracted, is known as ....

(i)   difference   (ii)   addition

(iii) subtrahend   (iv) minuend

d. For each addition fact, we get .... subtraction facts.

(i)   1   (ii)   2

(iii) 3   (iv) 4

e. The difference between 6392 and 3471 is equal to ....

(i)   2921   (ii)   2920

(iii) 2919   (iv) none of these

2. **Write each of the following in columns and subtract.**

a. $686 - 382$ b. $636 - 384$ c. $3248 - 1699$ d. $9612 - 6498$

3. **Subtract each of the following.**

a.

H	T	O
8	0	0
− 5	0	9

b.

Th	H	T	O
9	9	0	0
− 6	2	4	8

c.

Th	H	T	O
6	3	0	0
− 4	2	7	8

4. **Solve the following by using a short cut method.**

a. $644 - 448$ b. $594 - 363$ c. $4638 - 2425$ d. $7368 - 4343$

5. **Write two subtraction facts for each of the following addition facts.**

a. $585 + 408 = 993$ b. $2435 + 2365 = 4800$

6. **Solve the following.**

a. $302 - 128 + 446$ b. $3604 + 3727 - 4468$ c. $326 - 346 + 549$

d. Payal made a rangoli of yellow and pink flowers. There were 4606 flowers in all, of which 2286 were yellow flowers. How many pink flowers were there in the rangoli ?

Subtract the difference of 5828 and 849 from their sum.

Lab Activity

Objective : To develop accuracy in subtraction of 3-digit and 4-digit numbers with regrouping.

Materials Required : Chits with 3-digit to 4-digit numbers written on them (one chit for one number), plastic bowls and scoreboard

Process:

❖ This activity will be done in teams. A total of 10 teams to be made in the class.

❖ Each team will be given a bowl full of number chits.

❖ Each member will draw 2 chits from the bowl. For example : chits with the number 2535 and 468

❖ Now, the student will subtract the smaller number from the bigger one.

2535 > 468 So,

Th	H	T	O
	4	12	15
2	5̶	3̶	5̶
−	4	6	8
2	0	6	7

❖ Each member will draw the chits a minimum of 5 times and work out the sums.

❖ After each draw the bowl should be shaken well before the next draw.

❖ After all the sums have been worked out, the scoring will be done for each team according to a pattern that the teacher decides.

❖ The score for each sum will depend upon the difference of the two numbers drawn. For example, difference between 0 and 100, one mark; difference between 101 and 200; two marks etc; or the other way round.

❖ The total for each team will decide the winner.