2. Addition and Subtraction

$$2 + 3 = 5$$
$$7 - 4 = 3$$

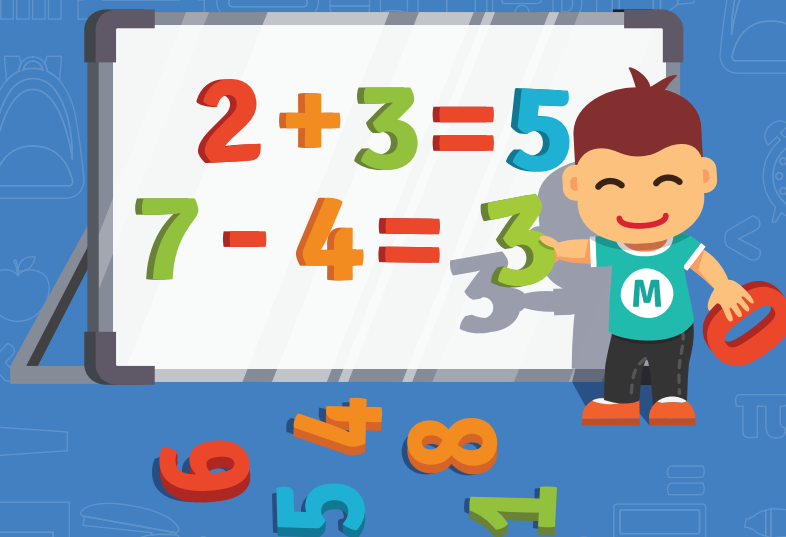## Key Concepts

1. Addition of up to 6-digit numbers
2. Subtraction of up to 6-digit numbers
3. Addition and subtraction together

Why should I read this chapter?

Addition and subtraction help us find the total and the difference between different quantities. These mathematical operations are required in various real-life situations, like adding and subtracting money, buying items in different quantities, comparing different quantities of food, liquid and other substances.

1. Fill in the blanks.

a.) $281 + 400 = 400 + \boxed{}$

b.) $743 - \boxed{} = 0$

c.) $1{,}250 + \boxed{} = 1{,}251$

d.) $1{,}000 - \boxed{} = 999$

e.) $\boxed{} + 0 = 7{,}056$

f.) $564 - 0 = \boxed{}$

Prep-up

Ram runs a business of handcrafted articles in India. His friend Ryan, from the USA, ordered some articles from him.

I want to order 300,000 jute bags and 200,000 wooden articles.

Sure, I will send 50,235 jute bags and 2,00,000 wooden articles in the first week and the remaining in the last week of this month.

In which number system is 300,000 written? $\boxed{}$

Write the number name of 2,00,000. $\boxed{}$

Can you find how many articles are exported in the first week of the month? $\boxed{}$

Which method do we have to use to find out the number of articles remaining to be exported?

$\boxed{}$
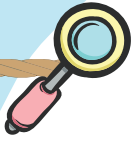
Addition of up to 6-digit numbers

In order to add large number, follow the steps given below.

Step 1	Arrange the addends in columns.
Step 2	Start adding the numbers from the right. Start with the digits in the ones place and gradually move towards the left.
Step 3	Regroup wherever necessary.
Step 4	Write the final answer.

Example 1: 73,801 + 4,197

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

Example 2: 41,582 + 25,307

TTh	Th	H	T	O
4	1	5	8	2
+ 2	5	3	0	7
6	6	8	8	9

Example 3: 57,381 + 2,709

TTh	Th	H	T	O
1	1		1	
5	7	3	8	1
+	2	7	0	9
6	0	0	9	0

Example 4: 62,803 + 27,199

TTh	Th	H	T	O
1	1	1	1	
6	2	8	0	3
+ 2	7	1	9	9
9	0	0	0	2

Example 5: 4,61,953 + 17,044

L	TTh	Th	H	T	O
4	6	1	9	5	3
+	1	7	0	4	4
4	7	8	9	9	7

Example 6: 6,18,120 + 3,80,359

L	TTh	Th	H	T	O
6	1	8	1	2	0
+ 3	8	0	3	5	9
9	9	8	4	7	9

Example 7: 3,20,893 + 19,918

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

Example 8: 3,29,109 + 5,01,987

L	TTh	Th	H	T	O
	1	1		1	
3	2	9	1	0	9
+ 5	0	1	9	8	7
8	3	1	0	9	6

1. 61,870 + 31,361

TTh	Th	H	T	O

2. 6,71,694 + 2,19,630

L	TTh	Th	H	T	O

Example 9: The government runs several health schemes in rural areas to improve the health conditions of the people living there. In a certain year, 5,59,105 adults and 3,09,450 children were benefitted from such a scheme. Find the total number of people who benefitted from the health schemes.
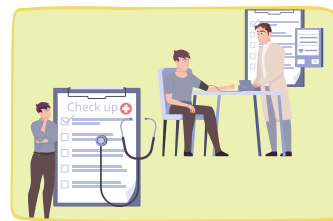
	L	TTh	Th	H	T	O	
		1					
	5	5	9	1	0	5	number of adults who benefitted
+	3	0	9	4	5	0	number of children who benefitted
	8	6	8	5	5	5	total number of people benefitted

Therefore, a total of 8,68,555 people benefitted in the rural areas from the health schemes.

Example 10: Riya formed the smallest possible 6-digit odd number using the digits of her roll number 2907. Rohan wrote a number, which is 1,00,999 more than Riya's number. Which number did Rohan write?

Solution: number formed by Riya = [   ]

number written by Rohan = 1,00,999 + [   ]

= [   ]

L	TTh	Th	H	T	O

Rohan wrote the number [   ] .

1. **Find the sum.**

a.

TTh	Th	H	T	O
6	4	6	8	2
+	4	2	1	0

b.

TTh	Th	H	T	O
8	5	2	7	2
+	4	3	2	5

c.

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

d.

TTh	Th	H	T	O
7	1	9	5	4
+	3	5	7	1

e.

TTh	Th	H	T	O
4	5	2	3	9
+ 3	2	4	4	0

f.

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

g.

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

h.

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

i.

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

j.

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

k.

L	TTh	Th	H	T	O
5	3	0	0	2	5
+	3	8	7	8	5

l.

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

m.

L	TTh	Th	H	T	O
4	2	7	2	2	3
+ 2	7	0	9	4	4

n.

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

o.

L	TTh	Th	H	T	O
7	2	9	6	6	0
+ 2	3	3	4	4	6

2. **Solve the following.**

a.) Find the sum of the greatest 5-digit number and the smallest 5-digit odd number.

b.) Sneha has ₹28,372 more than Tina. If Tina has ₹75,350, then how much money does Sneha have?

c.) Reena jogged 32,985 m in February and 54,625 m in March. Find the total distance she jogged in the two months.

d.) While conducting a survey, it was found that 2,24,454 babies were born in May and 3,19,371 babies were born in June. Find the total number of babies born in these two months.

e.) In April, 1,23,735 people visited a planetarium, while 1,39,373 people visited it in May. How many people visited the planetarium in the two months?
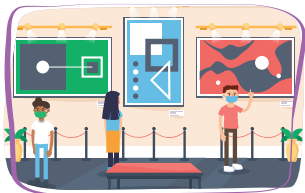
f.) If 1,37,952 and 80,162 people visited an exhibition on Saturday and Sunday, respectively, then how many people visited the exhibition in all?

g.) In January, the price of a laptop was ₹1,25,028. In February, the price of the laptop increased by ₹18,999. Find the price of the laptop in February.
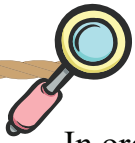
Subtraction of up to 6-digit numbers

In order to subtract large number, follow the steps given below.

Step 1 → Write the minuend on the top of the subtrahend.

Step 2 → Start subtracting the numbers from the ones place.

Step 3 → Regroup, if required.

Step 4 → Write the final answer.

Example 11: 76,425 – 3,124

TTh	Th	H	T	O
7	6	4	2	5
–	3	1	2	4
7	3	3	0	1

Example 12: 73,945 – 41,931

TTh	Th	H	T	O
7	3	9	4	5
– 4	1	9	3	1
3	2	0	1	4

Example 13: 64,081 – 2,965

TTh	Th	H	T	O
	③	⑩	⑦	⑪
6	4̶	0̶	8̶	1̶
–	2	9	6	5
6	1	1	1	6

Example 14: 63,172 – 31,928

TTh	Th	H	T	O
	②	⑪	⑥	⑫
6	3̶	1̶	7̶	2̶
– 3	1	9	2	8
3	1	2	4	4

Example 15: 5,82,163 – 61,132

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

Example 16: 3,68,417 – 2,20,012

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

Example 17: 8,31,975 – 25,361

L	TTh	Th	H	T	O
	②	⑪			
8	3̶	1̶	9	7	5
−	2	5	3	6	1
8	0	6	6	1	4

Example 18: 5,32,149 – 3,10,918

L	TTh	Th	H	T	O
		①	⑪		
5	3	2̶	1̶	4	9
− 3	1	0	9	1	8
2	2	1	2	3	1

Try this yourself

1. 71,236 − 46,398

TTh	Th	H	T	O

2. 6,74,213 − 2,81,374

L	TTh	Th	H	T	O

Word problems on subtraction

Example 19: For a Christmas carnival, 27,190 tickets were sold at the ticket counter and 45,678 tickets were sold online. How many more tickets were sold online than at the ticket counter?

TTh	Th	H	T	O
③	⑮	⑤	⑰	
~~4~~	~~5~~	~~6~~	~~7~~	8
− 2	7	1	9	0
1	8	4	8	8

number of tickets sold online

number of tickets sold at the ticket counter

difference between the number of tickets sold

Therefore, 18,488 more tickets were sold online than at the ticket counter.

Example 20: In a month, 5,37,105 people used the transport service on weekdays, while 2,45,083 people used the service on weekends. How many more people used the transport service on the weekdays than on the weekends?

Solution: number of people using the transport service on weekdays =

number of people using the transport service on weekends =

difference between the number of people

= ⬚ − ⬚

= ⬚

L	TTh	Th	H	T	O

⬚ more people used the transport service on the weekdays.

1. Subtract the following numbers.

a.

TTh	Th	H	T	O
5	5	3	3	9
−		2	2	1	3

b.

TTh	Th	H	T	O
4	7	5	2	9
−		2	4	2	3

c.

TTh	Th	H	T	O
4	0	8	7	6
−		2	3	1	9

d.

TTh	Th	H	T	O
7	5	0	9	1
−		4	9	7	9

e.

TTh	Th	H	T	O
6	5	8	8	9
−	3	0	2	5	1

f.

TTh	Th	H	T	O
5	9	4	4	3
−	3	2	1	2	0

g.

TTh	Th	H	T	O
5	2	8	9	1
−	3	8	7	2	9

h.

TTh	Th	H	T	O
6	7	3	1	1
−	4	2	4	0	9

i.

L	TTh	Th	H	T	O
6	3	1	0	8	0
−	3	7	0	9	2	3

j.

L	TTh	Th	H	T	O
5	1	3	4	7	2
−		3	0	1	2	5

k.

L	TTh	Th	H	T	O
4	5	1	2	8	0
−		6	1	0	0	3

l.

L	TTh	Th	H	T	O
6	3	1	3	9	0
−		3	2	0	9	9

m.

L	TTh	Th	H	T	O
5	7	8	0	9	1
−		2	9	6	8	8

n.

L	TTh	Th	H	T	O
7	6	9	8	5	3
−	4	4	5	6	2	1

o.

| L	TTh	Th	H	T	O
5	9	1	2	3	6
−	3	7	1	1	2	5

2. **Solve the following.**

a. The difference between two numbers is 7,724. If the subtrahend is 35,674, then find the minuend.

b. By how much is 35,899 less than 65,432?

c. A shopkeeper sold 1,58,340 kg of wheat in June. He sold 2,56,780 kg of wheat in July. In which month did he sell a greater quantity of wheat and by how much?

d. Sunil has ₹2,75,465 in his bank account. He withdrew a sum of ₹42,999. How much money is left in his account?

e. For an examination, 2,00,000 students appeared. Out of them, if 83,632 are boys, how many girls appeared for the examination?

f. The sum of two numbers is 2,93,736. If one of the numbers is 1,88,345 then find the other number.
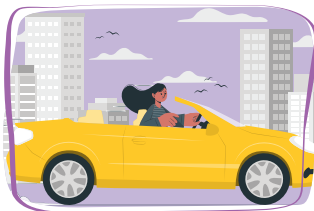
g. Sunita had ₹7,93,823. She bought a car worth ₹4,38,463. Find the amount left with her.

h. Megha is traveling from a city to another. The distance between the two cities is 5,01,325 m. If she had already covered a distance of 82,350 m, how much distance is still left?

Addition and subtraction together

Example 21: Arun and Uday wanted to raise funds to build an old-age home. They wanted to raise ₹7,00,000. If Arun raised ₹2,25,500 and Uday raised ₹3,15,550, then how much money do they still need to raise?

	L	TTh	Th	H	T	O	
		1	1				
	2	2	5	5	0	0	amount raised by Arun
+	3	1	5	5	5	0	amount raised by Uday
	5	4	1	0	5	0	total amount raised by them

	L	TTh	Th	H	T	O	
		9	9	9			
	6	10	10	10	10		
	7	0	0	0	0	0	total amount they want to raise
−	5	4	1	0	5	0	total amount raised by them
	1	5	8	9	5	0	amount they still need to raise

The remaining amount to be raised is ₹1,58,950.

Example 22: Subtract 2,51,806 from the sum of 3,46,821 and 2,56,389.

	L	TTh	Th	H	T	O	
	3	4	6	8	2	1	
+	2	5	6	3	8	9	
							the sum of 3,46,821 and 2,56,389

L	TTh	Th	H	T	O

the difference of the sum and 2,51,806

Progress Meter 3

1. **Solve the following.**

   (a.) $1,25,341 + 3,89,125 - 2,71,203$ (b.) $2,73,627 + 2,43,912 - 1,57,469$

   (c.) $7,58,932 + 1,12,936 - 5,60,872$ (d.) $4,83,210 + 1,30,019 - 2,87,334$

   (e.) $2,64,324 + 2,36,262 - 1,15,631$ (f.) $3,98,512 + 2,38,373 - 1,98,843$

2. **Solve the following.**

   (a.) From a wire 45,000 m long two pieces of lengths 15,068 m and 23,945 m were cut. Find the length of the remaining wire.

   (b.) In an election, 6,21,145 votes were cast for three candidates. The number of votes cast for Candidate A and Candidate B were 1,35,451 and 2,05,988, respectively, and the remaining votes were cast for Candidate C. Find the number of votes cast for Candidate C.
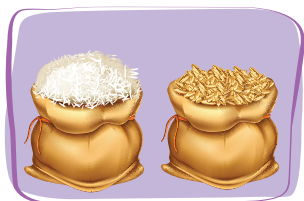
   (c.) In a godown, there are 21,045 kg rice and 28,658 kg wheat. Out of these 30,214 kg grain is sold. What amount of grain is left in the godown?

   (d.) Subtract 4,07,254 from the sum of 2,74,658 and 1,98,697.

1. Select the correct pairs of numbers, which when subtracted gives the difference given.

a.

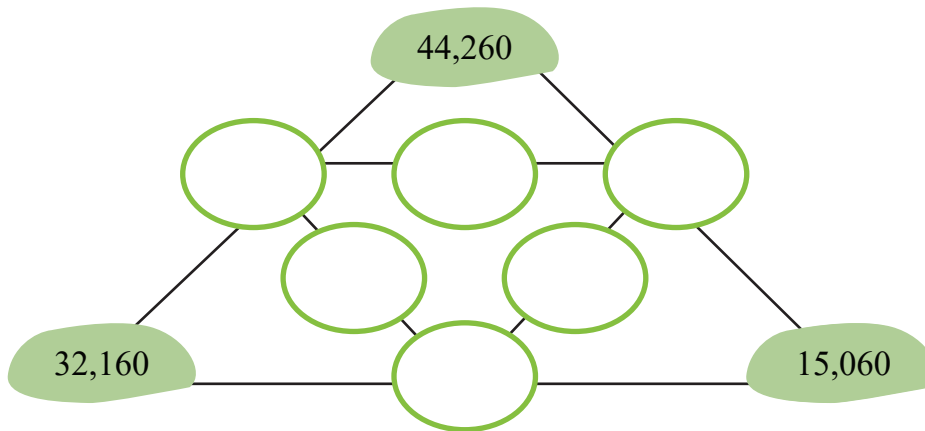| 53,178	55,328	39,924	13,945

b.

67,324	49,630	29,641	59,638

$\boxed{} - \boxed{} = 15,404$

$\boxed{} - \boxed{} = 7,686$

2. Complete the puzzle below using the given hint.

Hint: The numbers in the middle are the differences between the numbers at the end.

44,260

32,160

15,060

Maths Connect

The sun along with the celestial bodies together form the solar system. There are eight planets in the solar system. They are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Mercury is the closest to the sun, while Neptune is the farthest. The radii of some of the planets are provided in the given image. Answer the following questions from there.

Saturn
58,232 km

Neptune
24,622 km

Jupiter
69,911 km

Uranus
25,362 km

a. Find the total length of the radii of Neptune and Uranus.

b. Find the difference between the radii of Jupiter and Saturn.

Exercise

1. Add the following numbers.

   (a.) 19,732 + 20,251   (b.) 3,34,796 + 19,382

   (c.) 1,75,239 + 1,32,163   (d.) 5,12,960 + 3,52,625

   (e.) 4,63,924 + 49,321   (f.) 18,726 + 2,62,511

   (g.) 83,727 + 34,963   (h.) 1,00,571 + 1,34,001

   (i.) 2,74,803 + 2,37,382   (j.) 27,262 + 1,72,633
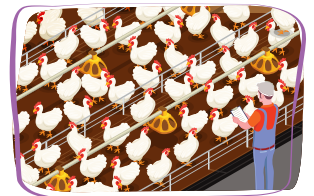
2. Compare the following using >, < or =.

   (a.) 37,462 + 15,436 ☐ 29,462 + 17,563

   (b.) 1,59,631 + 1,83,837 ☐ 2,45,630 + 28,392

   (c.) 1,89,346 + 2,93,821 ☐ 2,75,227 + 2,83,463

3. Solve the following.

   (a.) A poultry farm had 3,39,500 hens in October. In November, 2,03,732 more hens were bought. How many hens are there in the farm now?

   (b.) On Saturday and Sunday, 1,28,373 and 1,37,836 people visited the Red Fort, respectively. How many people visited the Red Fort in the two days in all?

   (c.) In an election, Mr. Joshi and Mr. Sharma received 49,374 and 37,884 votes, respectively. How many people voted in the election in all?
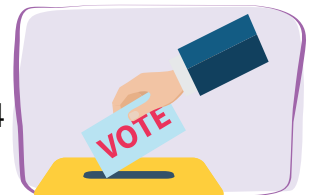
   (d.) There were 1,23,484 boys and 97,836 girls participating in a Science quiz. How many students participated in the quiz in all?

4. **Subtract the following numbers.**

    (a.) 65,980 − 36,589   (b.) 7,26,423 − 5,29,411

    (c.) 96,345 − 74,296   (d.) 2,56,432 − 2,25,474

    (e.) 1,98,631 − 48,396   (f.) 1,60,507 − 14,321

    (g.) 3,75,563 − 96,360   (h.) 27,854 − 23,720

    (i.) 4,52,987 − 2,64,725   (j.) 8,76,540 − 35,748

5. **Solve the following.**

    (a.) 4,63,912 + 2,73,621 − 2,19,642   (b.) 5,83,602 + 1,37,233 − 3,74,561

    (c.) 2,96,314 + 3,62,622 − 3,34,826   (d.) 4,53,690 + 5,93,736 − 3,74,698

6. **Solve the following.**

    (a.) Nita bought a plot of land for ₹5,57,540. After six months, she sold the same plot for ₹6,86,870. How much more money did she get after selling the plot?

    (b.) In November, 25,725 people visited the zoo, while, 1,28,545 people visited in December. How many more people visited the zoo in December than in November?

    (c.) A factory used 73,532 lemons in May and 62,982 lemons in June to make pickles. How many more lemons were used in May than in June?

    (d.) In a week, 4,56,891 Hindi and 98,332 English newspapers were printed. If the number of newspapers to be printed was 6,00,000, then find the number of newspapers yet to be printed.

    (e.) On the event of a Christmas party, Nita spent ₹20,545 on cake and ₹1,28,976 on decorations. If the total budget of the party was ₹2,50,300, then what amount of money is still left with her?

7. **Choose the correct options.**

(a.) 3,45,699 + _____ = 3,45,700

i. 1

ii. 100

iii. 0

iv. 10

(b.) Find the number, which is 1,299 more than the greatest 5-digit number.

i. 1,00,099

ii. 1,01,298

iii. 1,99,000

iv. 1,10,201

(c.) Riya bought a car for ₹3,25,549 and a bike of ₹89,359. Find the total amount of money spent by Riya.

i. ₹5,00,000

ii. ₹4,50,099

iii. ₹4,14,908

iv. ₹5,10,808

(d.) By how much is 2,45,631 more than the greatest 5-digt number?

i. 1,45,632

ii. 1,50,000

iii. 1,32,542

iv. 1,40,000

(e.) What should be subtracted from 58,236 to get the smallest 5-digit number?

i. 10,000

ii. 38,508

iii. 48,236

iv. 11,111

(f.) Madhav bought a mobile phone for ₹1,25,899. He paid ₹98,325 by cash and remaining amount by card. How much money did he pay by card?

i. ₹25,999

ii. ₹27,574

iii. ₹31,984

iv. ₹30,898

(g.) Vina has ₹2,50,981 in her account. She gave ₹1,05,640 to her brother. How much money is left in her account?
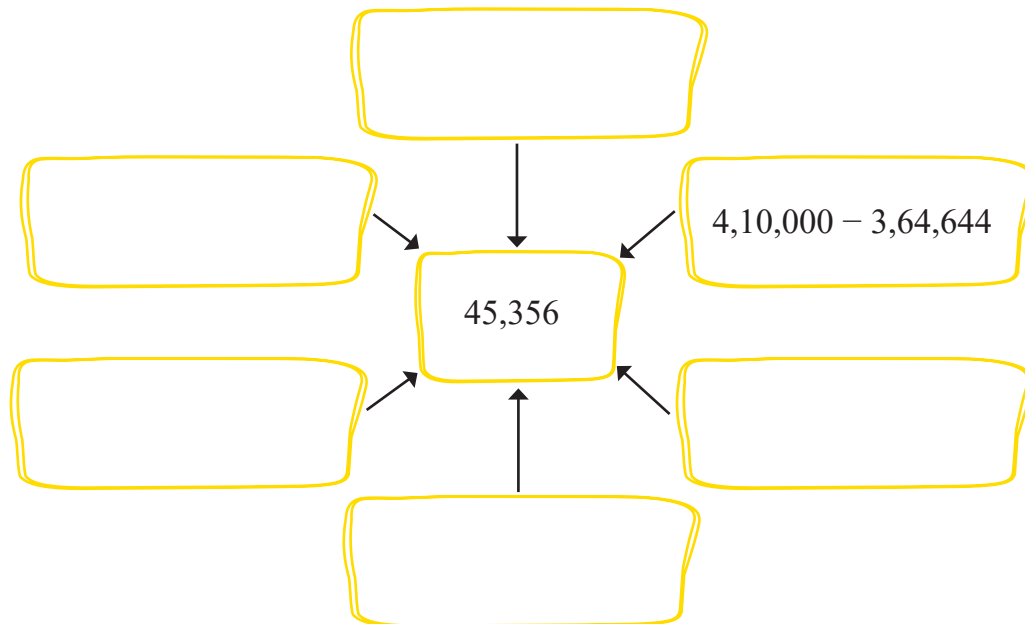
i. ₹1,50,347

ii. ₹1,45,341
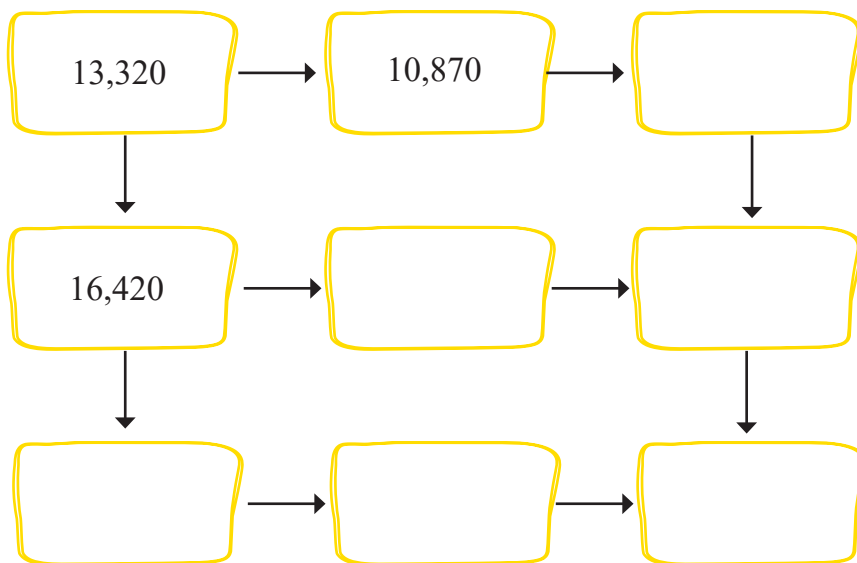
iii. ₹1,10,350

iv. ₹1,25, 981

1. Form pairs of 6-digit numbers, which when subtracted will give the difference given in the middle. One has been done for you.

```
                    [                    ]
                              |
                              v
[            ]  ─→        ┌──────────┐       ←─  [ 4,10,000 − 3,64,644 ]
                         │  45,356  │
[            ]  ─→        └──────────┘       ←─  [            ]
                              ^
                              |
                    [                    ]
```

2. Use the given keys to fill in the boxes. One has been done for you.

13,320	→	10,870	→	
↓				↓
16,420	→		→	
↓				↓
	→		→	

Key

⟶ subtract 2,450

↓ add 3,100

46