ADDITION

I Know

- Addition of 1, 2, 3, 4-digit numbers with regrouping
- Addition of 1, 2, 3, 4-digit numbers without regrouping

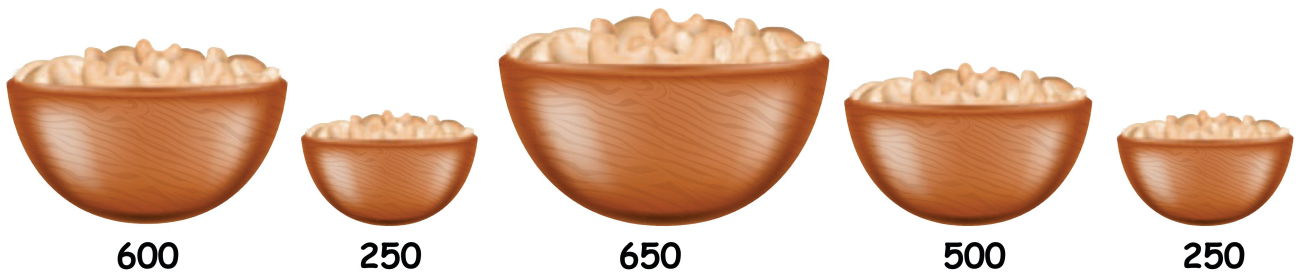## Learning Goals

I will be able to

- understand the properties of addition
- add 5-digit numbers with/without regrouping
- add 6-digit numbers with/without regrouping
- solve real-life application problems based on addition

Getting Ready

Circle the bowls which would give together a total of 1000 cashew nuts.

600   250   650   500   250

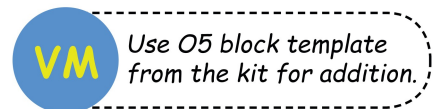Addition is the process of combining two or more numbers.

Sum

Sum is the result obtained after adding two or more numbers.

Addend

Addends are the numbers to be added to get the sum.
Addend + Addend = Sum

VM — *Use O5 block template from the kit for addition.*

Let's practise Classwork 1

1) Add the following.

  a) 367 + 293   b) 593 + 383   c) 836 + 193   d) 348 + 293
  e) 2838 + 453   f) 1838 + 827   g) 3736 + 1372   h) 2837 + 2938
  i) 4485 + 1938   j) 4282 + 2212   k) 6342 + 1625   l) 2836 + 3635

2) Find the number which is 1873 more than 1837.

3) Find the number which is 937 more than 2938.

4) Find the sum of largest 3-digit number and smallest 4-digit number.

Let's practise Homework 1

1) Add the following.

  a) 341 + 241   b) 362 + 523   c) 535 + 494   d) 648 + 293
  e) 6614 + 525   f) 2877 + 758   g) 4521 + 4341   h) 3654 + 1344
  i) 5671 + 2336   j) 4625 + 3657   k) 2037 + 1836   l) 7263 + 1566

2) Find the number which is 2362 more than 2123.

3) Find the number which is 373 more than 2837.

4) Find the sum of largest 3-digit even number and smallest 4-digit number.

Properties of Addition

Property 1: When the order of the addends is changed, the sum remains the same.

Example 239 + 120 = 120 + 239

Property 2: When 0 is added to any number, the sum is the number itself.

Example 388 + 0 = 388

Property 3: When one is added to any number, the sum will be the next number, called the successor of the number.

Example 785 + 1 = 786

Property 4: If three or more numbers are added together, the sum remains the same even if their grouping is changed.

Example 263 + (120 + 23) = (263 + 120) + 23

Addition of Large Numbers

Steps for adding numbers:

Step 1: Arrange the numbers in columns according to their place value.
Step 2: Start adding from ones place and continue adding towards the left.
Step 3: Regroup when necessary.

Addition of 5-Digit or 6-Digit Numbers Without Regrouping

Example 1 Add 73,854 + 14,132

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

Step 1: Arrange the numbers according to their place value.

Step 2: Add the ones.

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

Step 3: Add the tens.

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

Step 4: Add the hundreds.

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

Step 5: Add the thousands.

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

Step 6: Add the ten thousands.

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

Example 2 Add 2,62,635 and 21,023

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

Example 3 Add 3,41,120 and 1,25,851

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

Addition of Three Numbers

Add 21,049 + 31,210 + 27,620

Step 1: Arrange the numbers according to their place value

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

Step 2: Add the ones.

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

Step 3: Add the tens.

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

Step 4: Add the hundreds.

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

Step 5: Add the thousands.

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

Step 6: Add ten thousands.

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

Example 2 Add 5,21,345, 23,112 and 10,221

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

Let's practise
Classwork 2

1) Add the following.

a)

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

b)

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

c)

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

d)

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

e)

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

f)

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

g)

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

h)

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

2) Solve the following.

a) Add 23,456 and 62,213

b) Add 3,84,321 and 13,532

c) Add 3,63,277 and 1,34,201

d) Add 6,87,391 and 2,11,607

e) 2,84,721 + 3,14,167

f) 8,29,002 + 1,60,281

g) 1,02,711 + 53,142 + 21,121

h) 2,83,023 + 1,15,421 + 1,00,413

i) 1,63,253 + 2,00,022 + 1,32,421

j) Add 27,352 + 1,32,121 + 10,000

Let's practise
Homework 2

1) Add the following.

a)

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

b)

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

c)

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

d)

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

e)

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

f)

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

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

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

2) Add the following numbers.

a) 63,631 and 12,358

b) 3,00,926 and 26,012

c) 8,36,271 and 1,62,525

d) 2,74,623 and 1,24,213

e) 3,63,521 and 1,23,201

f) 2,63,525 and 1,31,213

g) 1,28,709 and 7,31,180

h) 1,83,723   14,224   1,00,000

i) 6,24,352   23,321   21,102

j) 10,392   1,09,301   10,101

Addition of 5-Digit or 6-Digit Numbers With Regrouping

Example 1   Add 58,372 + 43,647

Step 1: Arrange the numbers according to their place value.

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

Step 2: Add the ones.

2 ones + 7 ones = 9 ones

Write 9 in the ones place.

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

Step 3: Add the tens.

7 tens + 4 tens = 11 tens

11 tens = 1 hundred + 1 ten

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

Write 1 in the tens place and carry over 1 to the hundreds place.

Step 4: Add the hundreds.

1 hundred + 3 hundreds + 6 hundreds = 10 hundreds

10 hundreds = 1 thousand + 0 hundreds

Write 0 in the hundreds place and carry over 1 to the thousands place.

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

Step 5: Add the thousands.

1 thousand + 8 thousands + 3 thousands = 12 thousands

12 thousands = 1 ten thousand + 2 thousands

Write 2 in the thousands place and carry over 1 to the ten thousands place.

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

Step 6: Add the ten thousands.

1 ten thousand + 5 ten thousands + 3 ten thousands = 9 ten thousands

Write 9 in the ten thousands place.

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

Example 2 Add 5,46,272 and 85,354

L	TTh	Th	H	T	O
(1)	(1)		(1)		
5	4	6	2	7	2
+		8	5	3	5	4
6	3	1	6	2	6

Example 3 Add 3,45,493 and 4,28,364

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

Example 4

Add 284636, 17252 and 18352

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

Example 5

Add 583273, 143723 and 12345

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

Let's practise
Classwork 3

1) Add the following.

a)

L	TTh	Th	H	T	O
	6	4	6	8	2
+	6	5	3	6	4

b)

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

c)

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

d)

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

e)

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

f)

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

g)

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

h)

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

i)

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

j)

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

k)

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

l)

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

2) Add the following numbers.

a) 64,577 and 56,752

b) 3,67,982 and 68,334

c) 3,38,277 and 4,86,576

d) 1349921 and 43,62,321

e) 28,36,212 and 1,83,623

f) 63,62,821 and 2,35,342

g) 5,34,260 and 3,34,262

h) 2,43,836   27,634   17,323

i) 7,36,252   13,362   36,352

j) 76,473   27,352   1,83,326

Challenge!

Find the missing digits

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

1) Add the following.

a)

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

b)

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

c)

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

d)

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

e)

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

f)

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

g)

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

h)

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

2) Solve the following:

a) Add 55,581 and 73,521

b) Add 2,56,886 and 3,47,422

c) Add 4,56,262 and 2,46,587

d) Add 4,46,921 and 5,38,232

e) Add 6,47,363 and 183622

f) 7,36,262 + 2,36,285

g) Add 8,26,352, 1,28,463

h) 5,28,362 + 1,37,372 + 44,362

i) 23,72,515 + 50,792 + 17,325

j) 83649 + 27463 + 5,67,476

Word Problems on Addition

Example 1   In a public library there are 30,550 books. As part of expanding the library, 55,850 new books were added. What is the total number of books in the library?

Solution:

The number of books in the library   = 30550

Number of newly added books   = 55850

Total number of books in the library

   = 30550 + 55850

Answer: There are a total of 86,400 books in the library.

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

Example 2   Gopal purchased a car and a mobile phone. The cost of the car is ₹ 5,72,950 and the cost of the mobile phone is ₹ 34,999. How much did he spend in all?

Solution: Cost of the car = ₹ 5,72,950

         Cost of the mobile phone = ₹ 34,999

Total money Gopal spent

       = ₹ 5,72,950 + ₹34,999

Answer: Gopal spent ₹ 6,07,949.

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

1) Raghav is a farmer who grows flowers. The given table shows the number of flowers he harvested.

Flower	Count
Orchid	72,846
Marigold	1,83,722
Rose	56,774
Dalia	2,73,637
Carnation	6,35,264

a) Find the total number of Orchids and Marigolds.

b) How many marigold and rose flowers are there in all?

c) The count of the carnation was taken wrong. The actual count is 163231 more than the given count. Find the number of carnation flowers harvested.

d) Find the total number of Carnation and Rose.

e) What is the total number of Orchids, Marigold and Dalia flowers.

2. Solve the following.

a) Find the sum of the largest 5-digit number and the largest 5-digit even number.

b) Which number is 19,378 more than 9,37,288?

c) A number Q is 92,362 more than the largest 5-digit number. Find the number Q.

d) In a country 2,24,836 babies were born in the month of January and 2,19,371 babies were born in the month of February. Find the total number of babies born in the two months.

e) A planetarium had 23,735 visitors in the month of April and 39,373 visitors in the month of May. What is the total number of people visited the planetarium in the two months?

f) A factory produced 1,00,500 toys on Monday and 1,55,550 toys on Tuesday. Find the total number of toys produced by the company in two days.

g) A baker made 11,631 cakes in the month of May. In the next month he made 29,137 more cakes than the previous month. How many cakes did the baker make in the month of June?

h) Raghu purchased a land for ₹ 7,26,152 and spend ₹ 85,000 for leveling the land. How much money did he spend in all?

i) In an examination, 28362 students passed and 19372 students failed. How many students appeared for the examination?

j) 18,362 men, 37,252 women and 56,262 children came for a carnival. How many people came for the carnival?

k) The distance between station A and station B is 19,372 km and station B and station C is 2812 km. Find the distance between station A to C.

l) The price of gold was ₹ 25,028 for eight gram on a particular month, on the next month it was ₹ 8,372 more than the previous month and in the third month it is again increased by ₹ 6,000. What is the price of the gold in the third month?

Challenge!

Rashmi took out ₹25,000 from her bank account. Now, there is ₹46,000 left in her account. How much money was there in her account before she withdrew money?

1.   **A company produces mobile phones.**

The number of phones manufactured by the company is given below.

Day	Number of phones
Monday	28,370
Tuesday	47300
Wednesday	48,020
Thursday	28,360
Friday	53,620

a) What is the total number of phones manufactured on Monday and Tuesday?

b) Find the number of phones manufactured on Wednesday and Tuesday.

c) How many phones were manufactured by the company from Monday to Wednesday?

d) On Saturday, the company manufactured 1538 more phone than the number of phones manufactured on Friday. How many phones were manufactured on Saturday?

e) What is the total number of phones manufactured from Thursday to Saturday?

2. **Solve the following.**

a) Which number is 92,736 more than 9,73,729?

b) Find the sum of the smallest 6-digit odd number and the greatest 5-digit number.

c) A number Q is 77,658 more than the smallest 6-digit even number. Find the number Q.

d) In a town, 98,686 people applied for Aadhar card in the year 2012 and 26,352 more people applied for Aadhar card in the year 2013. Find the total number of people who applied for Aadhar card in the year 2013.

e) Hardik bought a laptop for ₹ 79,272 and a bike for ₹ 1,03,892. How much money did he spent in all?

f) There were 39,436 bags of rice in a godown. If 25,000 more bags were brought to the godown, how many bags of rice would be there in all?

g) The number of people travelled in metro in September in a city is 5,99,076 and the number of people travelled in metro in October is 3,27,272. How many people travelled in metro in these two months?

h) Meenakshi bought a fridge for ₹ 45,800 and an air conditioner for ₹ 65,099. Find the total money she spend.

i) Three candidates received 28326, 19372, 93736 votes respectively. Find the total number of people who voted.

j) A mobile network service company sent 73,500 messages on Monday and 28,373 more messages on Tuesday than on Monday. Find the total number of messages the company sent on the two days.

Math Connect

The coconut tree is a type of palm tree with a single trunk. Every part of the tree is used including the fruits, wood, and leaves. Major coconut producing states in India are Kerala, Tamil Nadu, Andhra Pradesh and Karnataka. From a coconut tree up to 180 coconuts can be harvested during a single harvest. About ten coconuts are required to make 1 litre of coconut oil.

Three farmers, Raman, Krishna and Murthy, harvested coconuts in two years. Find the total number of coconuts each of them harvested.

Farmer	Year 1	Year 2
Raman	37,274	23,347
Krishna	3,84,343	2,37,192
Murthy	1,95,836	2,81,382

Math Connect

Fill in the blanks:

a) [　　　] + 0 = 29382

b) 193729 + 1 = [　　　]

c) 38327 + [　　　] = 38328

d) [　　　] + 100 = 28732

e) 83627 + 1000 = [　　　]

f) 827283 + [　　　] = 827293

g) 273823 + [　　　] = 274823

h) 12921 + 7 = [　　　]

i) 19372 + 3 = [　　　]

j) 829381 + 6 = [　　　]

k) 18550 + [　　　] = 18600

l) 38473 + [　　　] = 29831 + 38473

m) 130 + 20 + 10 = [　　　] + 30

n) 5000 + 2000 + 400 = [　　　]

o) (27 + 13) + 3 = [　　　] + (13 + 3)

p) 39999 + [　　　] = 40000

Summary

- Addition is the process of combining two or more numbers.

- Sum is the result obtained after adding two or more numbers.

- Addends are the numbers to be added to get the sum.

- When the order of the addends is changed, the sum remains the same.

- When 0 is added to any number, the sum is the number itself.

- When one is added to any number, the sum will be the next number, called successor of the number.

- If three or more numbers are added together, the sum remains the same even if their grouping is changed.

Revision Exercise

1) Add the following.

a) 19,732 + 20,251

b) 1,34,825 + 1,32,163

c) 4,63,924 + 33,062

d) 83,727 + 13,786

e) 1,93,837 + 2,37,382

f) 2,83,737 + 1,93,827

g) 4,74,528 + 3,52,625

h) 18,726 + 27,262 + 2,62,511

i) 1,23,422 + 1,00,571 + 1,34,001

j) 7,36,242 + 27,262 + 1,72,633

2) Compare the following with >, < or =

a) 37462 + 12937 ⬚ 28372 + 19383

b) 193832 + 183837 ⬚ 292830 + 28392

c) 193721 + 293821 ⬚ 386383 + 283463

3) **Solve the following:**

a) A poultry farm produced 2,39,382 eggs in June and 1,93,732 eggs in July. Find the total number of eggs produced in the two months.
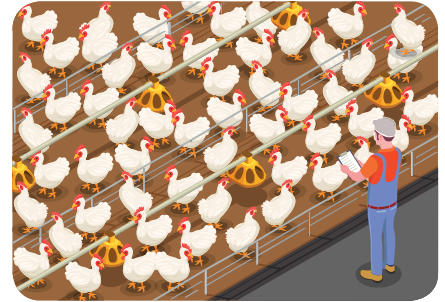
b) The number of tourists who visited Taj Mahal in two days is 28,373 and 37,836. Find the total number of people that visited in these two days.

c) In an election, two candidates obtained 48,374 and 34,884 votes. Find the total number of people who voted.

d) There were 23,484 boys and 37,836 girls who appeared for an Olympiad. Find the total number of students who appeared for the Olympiad.

Choose the correct options.

1) The sum of the largest 5-digit number and the smallest six-digit even number **is:**
   a) 200001   b) 200002
   c) 199999   d) 99998

2) The number which is 82027 more than the largest 5-digit number is:

   a) 82026   b) 182026
   c) 182036   d) 171916

3) If # = 6, * = 3, $ = 7, find #*$#* + #**$#.

   a) 12613   b) 127039
   c) 127129   d) 127139

4) Find the missing number. 15000 + _____ = 16000

   a) 100   b) 1000
   c) 2000   d) 10000

5) Kamal bought a plot of land for ₹6,27,290. He built a farmhouse for ₹3,45,850. The total money he spent is _____.

   a) ₹9,73,140   b) ₹9,63,140
   c) ₹9,62,140   d) ₹9,52,140

6) Find the missing number:

   87000 + 3000 = _____ + 90000
   a) 100   b) 1000
   c) 10000   d) 0

7) The digits in the thousands place and hundreds place of the number 68368 are interchanged to form a new number. Find the sum of the two numbers.

   a) 123326   b) 132236
   c) 132246   d) 154736

8) The number 3,83,721 is reversed to form a new number. The sum of the old number and the new number is:

   a) 5,11,104

   b) 5,11,004

   c) 5,01,004

   d) 5,11,114

9) The number which is fifteen thousand nine hundred seventy-two more than the number 2,92,836 is _____.

   a) 308,808

   b) 2,08,808

   c) 2,84,821

   d) 2,07,708

10) The sum of the largest and smallest 5-digit number formed by using the digits 5, 8, 2, 1, 7 exactly once is:

   a) 90,099

   b) 1,00,099

   c) 1,09,099

   d) 99,099