

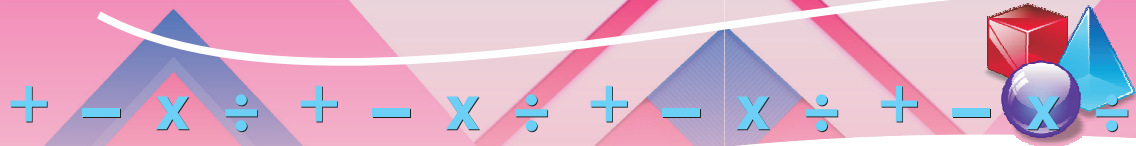


**CLICK HERE TO ACTIVATE**

**LESSON**  
PART 8



# 3



## THE FOUR BASIC OPERATIONS

### READY ... STEADY

#### A. Add.

$$\begin{array}{r} 1. \quad 7096 \\ + 5549 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 43728 \\ + 35893 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 54085 \\ \quad 9809 \\ + 57450 \\ \hline \\ \hline \end{array}$$

#### B. Subtract.

$$\begin{array}{r} 1. \quad 86956 \\ - 34067 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 956325 \\ - 214563 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 678523 \\ - 365876 \\ \hline \\ \hline \end{array}$$

#### C. Multiply.

$$\begin{array}{r} 1. \quad 4569 \\ \quad \times 7 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 7893 \\ \quad \times 63 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 245 \\ \quad \times 703 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 375 \\ \quad \times 205 \\ \hline \\ \hline \end{array}$$

#### D. Divide in the space given below.

$$1. \quad 5 \overline{)3507}$$

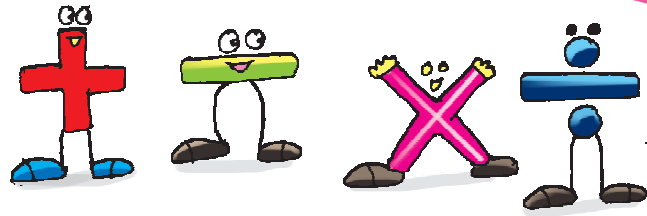
$$2. \quad 43 \overline{)637}$$

$$3. \quad 55 \overline{)574}$$

$$4. \quad 25 \overline{)365}$$

The four basic operations of Mathematics are :

1. Addition
2. Subtraction
3. Multiplication
4. Division



## ADDITION

Addition of larger numbers is done in the same way as addition of smaller numbers.

### Example :

In a cricket stadium there are 256395 men and 313676 women. How many people are watching the match?

**Solution :** Total number of spectators

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

In total 570071 people are watching the match.

## SUBTRACTION

Subtraction of larger numbers is done in the same way as subtraction of smaller numbers.

### Example :

There are 262478 people in a gathering. 131235 people leave the gathering after sometime. How many people are still present ?

**Solution :** Number of people present in the gathering

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

Number of people present in the gathering at present is 131243.

## MULTIPLICATION

### Multiplying by a 2-digit number

Let us multiply a 4-digit number by a 2-digit number.

#### Example :

If a cricket bat costs ₹ 2570.00, what will be the cost of 85 bats ?

**Solution :** The total cost will be ₹ 2570.00 multiplied by 85.

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

So, the total cost is ₹ 2,18,450

### Multiplying By A 3- Digit Number

In class 4, you have learnt how to multiply a 3-digit number by a 3-digit number. The method of multiplying a 4-digit number by a 3-digit number is similar.

#### Example :

The school ordered 3784 notebooks of 146 pages each. How many pages are there in all ?

**Solution :** Number of pages in all =  $3784 \times 146$   
= 5,52,464

	Th	H	T	O
	3	7	8	4
			×	1
				4
				6
	2	2	7	0
1	5	1	3	6
3	7	8	4	0
5	5	2	4	6

## DIVISION

In class 4, you have learnt how to divide a 4-digit number by a 2-digit number. The method of dividing a 5-digit number by a 2-digit number is similar.

**Example :**

A tea factory produces 39475 packets of tea in a month. If the factory works for 25 days in a month, how many packets of tea does it produce every day ?

**Solution :** Number of packets =  $39475 \div 25$

$$\begin{array}{r} 1579 \\ 25 \overline{) 39475} \\ \underline{25} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ 144 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \underline{125} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ 197 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \underline{175} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ 225 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \underline{225} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ 0 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \end{array}$$

**Check by multiplication**

$$\begin{array}{r} 1579 \\ \times 25 \\ \hline 7895 \\ 31580 \\ \hline 39475 \end{array}$$

The tea factory produces 1579 packets everyday.

**Exercise 3.1**

**A. Add the following.**

1. 472590 and 692572
2. 295374 and 78926
3. 378523 and 491586
4. 87293 and 85387
5. 264875 and 752954
6. 781563 and 573728

**B. Subtract the following.**

1. 327532 from 848786
2. 243127 from 650462
3. 341563 from 573728
4. 512345 from 532302
5. 437568 from 946575
6. 832654 from 914678

**C. Multiply the following.**

1.  $3970 \times 53$
2.  $3583 \times 28$
3.  $2146 \times 79$
4.  $675 \times 662$
5.  $345 \times 278$
6.  $534 \times 257$

**D. Divide and check your answer by multiplication.**

1.  $18325 \div 36$
2.  $82,006 \div 80$
3.  $40120 \div 32$
4.  $3400 \div 10$
5.  $3960 \div 41$
6.  $24832 \div 45$

**E. Solve the following.**

1. 452852 boys and 481573 girls appeared for an exam. Find the total number of students appeared for the exam.
2. 84824 ice-creams are produced in an ice-cream factory. 62843 ice-creams are taken for distribution. How many ice-creams are left in the factory ?
3. 4169 bricks are required to build a 1 m long wall. How many bricks are required to build a 27 m long wall ?
4. 15450 oranges are kept in a basket. The oranges are to be distributed to 15 traders equally. How many oranges each trader will get ?

**F. Fill in the blanks.**

1. The four basic operations of arithmetic are addition, \_\_\_\_\_ , multiplication and \_\_\_\_\_ .
2. When we add two numbers, the answer we get is the \_\_\_\_\_ of the two numbers.
3. The numbers that are added are called \_\_\_\_\_ .
4. When we subtract a smaller number from the larger, the answer we get is the \_\_\_\_\_ of the two numbers.

**ADDITION AND SUBTRACTION OF LARGER NUMBERS**

**Addition**

**Properties of addition :**

1. The sum or total remains the same irrespective of the order in which the numbers are taken.
2. When '0' is added to any number, the sum is the number itself.

The method of addition of large numbers is the same as that of addition of small numbers.

**Example :** Add 34579361 and 92635289

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

Answer : 127214650

## Subtraction

### Properties of subtraction :

1. When a number is subtracted from itself, the difference is always '0'.
2. When '0' is subtracted from any number, the difference is the number itself.
3. The order of numbers in subtraction cannot be changed. The greater number should always be above the smaller number.

The method of subtraction of large numbers is the same as that of subtraction of small numbers.

**Example :** Subtract 35246857 from 83957968.

	C	T L	L	T Th	Th	H	T	O
	8	3	9	5	7	9	6	8
-	3	5	2	4	6	8	5	7
	4	8	7	1	1	1	1	1

**Answer :** 48711111

**Checking the answer :** The correctness of the subtraction can be checked by adding the difference and subtrahend.

$$\begin{aligned}\text{Minuend} &= \text{Difference} + \text{Subtrahend} \\ &= 48711111 + 35246857 \\ &= 83957968\end{aligned}$$

So, the subtraction is correct.

## Exercise 3.2

### A. Add the following.

1. 32436891, 4953124 and 7256356
2. 4274569 and 2589225
3. 569734581, 82546723 and 9475384
4. 375294386 and 927641022

### B. Subtract the following and check the answer.

1. 34769586 from 587069847
2. 224678901 from 457290259

3. 378765432 from 975842406

4. 26843592 from 89367004

**C. Find the missing digits.**

1.

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

2.

5		6		8		7
-	2	5		8		4
2	8	9	0	8	9	4

**D. Solve the following.**

1. In a food grain godown 69,88,200 bags of wheat were stored. Rats ate away 379 bags, rain spoiled 4975 bags. How many bags remained in the godown ?
2. In a biscuit factory 9,45,250 biscuits were produced in the month of January. In the month of February, the factory produced 12,77,875 biscuits. What is the total number of biscuits produced in two months ?
3. At the start of cricket match 88,756 spectators were present at a stadium in Kolkata. 22,247 people came at different times to see the match. What is the total number of people present at the end of the match ?
4. A greater city had a population of 2,15,39,728 people. 75,45,741 people came from neighbouring states. What is the present population of the greater city ?
5. A construction company needs ₹ 9,57,86,290 to complete the construction of bridge. ₹ 6,29,34,680 are available with the company. How much more money the company needs to complete the construction ?
6. Aneesh had ₹ 49,87,500 in a bank. He withdrew ₹ 2,25,600 for purchases. Next month he deposited ₹ 39,500. What is the present balance in Aneesh's account in the bank ?
7. Total population of a state is 2,59,76,829. Of them 93,89,654 are children. How many adults are there in the state ?



## MULTIPLICATION AND DIVISION

### Multiplication

Large numbers are multiplied in a similar way like small numbers. Rules remain the same.

#### Properties of multiplication:

1. Numbers can be multiplied in any order. The product does not change.
2. When a number is multiplied by 1, the product is the number itself.
3. When a number is multiplied by 0, the product is 0.
4. When a number is multiplied by 10, put one 0 after the number to get the product.

**Example :**  $15 \times 10 = 150$ . The number 15 is multiplied by 10, put one zero after the product of 15 and 1, i.e. 150.

5. When a number is multiplied by 100, put two zeros after the number to get the product.

**Example :**  $27 \times 100 = 2700$ . The number 27 is multiplied by 100. 100 has two zeros. Therefore two zeros are put after the product of 27 and 1. So, the product is 2700.

6. When a number is multiplied by 10, 100, 1000, 10000, 100000 etc, put as many zeros at the end of the multiplicand as in the multiplier.

**Example :** (a)  $15 \times 10$ . The multiplier 10 has one 0. So, the product will be 150.

(b)  $27 \times 100$ . The multiplier 100 has two 0s.

So, the product will be 2700.

(c)  $38 \times 1000$ . The multiplier 1000 has three 0s.

So, the product will be 38000.

And so on.

**Example :** Multiply 35678 by 49.

$$\begin{array}{r} 35678 \\ \times 49 \\ \hline 321102 \\ 1427120 \\ \hline 1748222 \end{array}$$

**Ans.** The product is 1748222.

## SPECIAL CASE OF ZEROS

**Example :**  $7863 \times 604$

$$\begin{array}{r} 7863 \\ \times 604 \\ \hline 31452 \\ 00000 \\ 4717800 \\ \hline 4749252 \end{array}$$

You can leave out this  
→ step and multiply  
as shown on the right.

$$\begin{array}{r} 7863 \\ \times 604 \\ \hline 31452 \\ 4717800 \\ \hline 4749252 \end{array}$$

**Answer :** 4749252

## LATTICE MULTIPLICATION

Lattice multiplication is a grid used for multiplying two numbers. Let us learn by example.

**Example :** Multiply 429 by 864.

	4	2	9	
3	2	1	6	8
2	4	1	2	6
1	6	0	8	4

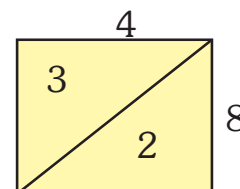
One Lakh	Ten Thousands	Thousands	Hundreds	Tens	Ones
3 = 3	$1+2+2+2$ = 7	$7+6+1+4+1$ +1=20	$2+5+2+0+6$ +1=16	$4+3+8$ =15	6
3	7	0	6	5	6

Steps :

1. Here both the multiplicand and multiplier are 3 digit numbers.
2. Draw  $3 \times 3$  square grids. Draw a diagonal in each square.

- Write the digits of the multiplicand along with horizontal side on top of each square.
- Write the digits of the multiplier along with vertical side of the square.
- Multiply each digit of the multiplicand with one digit of the multiplier at a time.
- Write the product in each square in such a fashion that each digit of the product is written in one half of the square.

Product of  $4 \times 8 = 32$ . The digit 3 is written on the upper half of square. The digit 2 is written on the lower half of the square.



- Write the product by adding each number which lies parallel.  $8 + 3 + 4 = 15$
- If the number comes to a 2-digit number place the extreme right digit and carry over 1 to the next line.
- Start from the extreme right diagonal.

**Answer :** The product is 370656.

## DIVISION

Large numbers are divided in a similar way as done for small numbers.

### Properties of division :

- When a number is divided by 1, the quotient is the number itself.

**Example :**  $75 \div 1 = 75$

- When 0 is divided by any number, the quotient is 0.

**Example :**  $0 \div 75 = 0$

- When the number is divided by itself, the quotient is always 1.

**Example :**  $75 \div 75 = 1$

- Division by 0 is not possible.

**Example :**  $75 \div 0 = \text{Not possible}$

- In division, the orders of numbers cannot be changed.

**Example :**  $75 \div 5 = 15$  is not equal to  $5 \div 75$

**In division of larger numbers, we estimate the multiples of the divisor.**

**Example :** Divide 9658458 by 56.

Step 1 : Divisor is a 2-digit number. Take the first two digits of dividend.  $96 > 56$ , so division is possible. Now, we have to estimate the digit of quotient.

31

$56 \times 1 = 56$ . Difference between  $96 - 56 = 40$ , which is less than 56. So, estimate of 1 is correct. Place 1 in quotient's place. Carry down 5 in the dividend and place it after 40.

Step 2 :  $56 \times 7 = 392$ ,  $405 - 392 = 13 < 56$ . So, 7 is correct. Place 7 in the quotient's place to the right of 1.

Step 3 :  $56 \times 2 = 112$ ,  $138 - 112 = 26 < 56$ . So, 2 is correct. Place 2 in the quotient's place to the right of 7.

Step 4 :  $56 \times 4 = 224$ ,  $264 - 224 = 40 < 56$ . So, 4 is correct. Place 4 in the quotient's place.

Step 5 :  $56 \times 7 = 392$ ,  $405 - 392 = 13 < 56$ . So, 7 is correct. Place 7 in the quotient's place.

Step 6 :  $56 \times 2 = 112$ ,  $138 - 112 = 26 < 56$ . So, 2 is correct. Place 2 in the quotient's place.

So, the quotient  $\rightarrow 172472$

Divisor  $\rightarrow 56$

Remainder  $\rightarrow 26$

Dividend  $\rightarrow 9658458$

$$\begin{array}{r}
 172472 \\
 56 \overline{) 9658458} \\
 \underline{56} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 405 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{392} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 138 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{112} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 264 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{224} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 405 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{392} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 138 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{112} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 26 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0}
 \end{array}$$

### Verification

We know that,

$$\text{Quotient} \times \text{Divisor} + \text{Remainder} = \text{Dividend}$$

$$\begin{aligned}
 &172472 \times 56 + 26 \\
 &= 9658432 + 26 \\
 &= 9658458
 \end{aligned}$$

**Example** : Divide 1234249 by 789

Step 1 : Divisor is a 3-digit number. Take first three digits of the dividend, i.e., 123,  $123 < 789$ .

So, division is not possible. So, we have to take the first four digits, i.e., 1234.

Step 2 :  $789 \times 2 = 1578 > 1234$ . So, 2 is not correct.  $789 \times 1 = 789$ . So, 1 is the correct estimate.

$$\begin{array}{r}
 1564 \\
 789 \overline{) 1234249} \\
 \underline{789} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 4452 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{3945} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 5074 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{4734} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 3409 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 \underline{3156} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\
 253 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0}
 \end{array}$$

Step 3 :  $789 \times 5 = 3945 < 4452$ . So, 5 is the correct estimate.

Step 4 :  $789 \times 6 = 4734 < 5074$ . So, 6 is the correct estimate.

Step 5 :  $789 \times 4 = 3156 < 3409$ . So, 4 is the correct estimate. Difference between 3409 and 3156 is  $253 < 789$

**Answer :** Quotient is 1564.

Remainder is 253

**Check the answer :**

We know,

$$\text{Quotient} \times \text{Divisor} + \text{Remainder} = \text{Dividend}$$

$$1564 \times 789 + 253$$

$$= 1233996 + 253$$

$$= 1234249$$

### Division by 10, 100 and 1000 ....

#### Division by 10

There is only one zero in the divisor. The digit at the ones place becomes the remainder. The rest of the digits will be the quotient.

**Example :**  $80 \div 10 = 80/10 = 8$

#### Division by 100

There are two zeros in the divisor. The digits at the ones and tens places become the remainder. The rest of the digits will be the quotient.

**Example:**

$$\begin{array}{r} 46 \\ 100 \overline{) 4629} \\ \underline{400} \phantom{0} \\ 629 \\ \underline{600} \\ 29 \end{array}$$

The number formed by the digits in the tens and ones places is 29 → Remainder

Rest of the digits make number 46 → Quotient

#### Division by 1000

There are three zeros in the divisor. The digits in hundreds, tens and ones places are the remainder. The number formed by the rest of the digits will be quotient.



**Example :**

$$\begin{array}{r}
 92 \\
 1000 \overline{) 92858} \\
 \underline{9000} \phantom{0} \\
 2858 \\
 \underline{2000} \\
 858
 \end{array}$$

The number formed by the digits in the hundreds, tens and ones places is 858 → Remainder

The rest of the digits make 92 → Quotient

## Exercise 3.3

### A. Multiply :

1.  $367896 \times 4$

2.  $53964 \times 53$

3.  $8729 \times 768$

4.  $75038 \times 924$

5.  $9291 \times 8281$

6.  $7920 \times 8750$

7.  $3856 \times 900$

8.  $6456 \times 5000$

9.  $3205 \times 7005$

### B. Find the missing digits in the coloured boxes :

1.

		×	9	0	0
			0	0	0
				0	0
4	5		0		
			0	0	0
4	5		0	0	0

2.

		×	7	0	0
			0		0
		0	0	0	0
4	9	0			0
					0
4		0		0	0

3.

				8	6
		×	1	8	
			1	1	6
	1	4			0
		8	0	0	0
			0	9	6
	3		0	9	6

4.

		4		2	7
			×		
			9	6	2
2		6		5	0
				1	2
2		2		1	2



## HOTS

$$34 + 59 = ?$$

**Find sum :**

1.  $75 + 99 =$  \_\_\_\_\_
2.  $69 + 48 =$  \_\_\_\_\_
3.  $84 + 29 =$  \_\_\_\_\_
4.  $63 + 99 =$  \_\_\_\_\_

Think :

$$34 + 60 = 94$$

$$94 - 1 = 93$$

$$34 + 59 = 93$$

### C. Multiply the following by lattice multiplication.

1.  $786 \times 678$
2.  $346 \times 546$
3.  $441 \times 451$
4.  $123 \times 123$

### D. Solve the following.

1. A farmer plants 640 trees in a row. How many trees are there in the field if there are 590 rows ?
2. The monthly tuition fee for each student in a school is ₹ 4567. There are 2637 students in the school. How much money is collected by the school each month by way of tuition fee ?
3. A van has a capacity to load 54756 books. If 257 vans are loaded with books, what will be the total number of books ?

### E. Find the quotient and remainder of the following and verify the answer :

1.  $952430 \div 254$
2.  $6794235 \div 168$
3.  $408596 \div 635$
4.  $947712 \div 768$
5.  $856629 \div 1000$
6.  $23456 \div 10$
7.  $57846 \div 100$
8.  $52856 \div 150$
9.  $378909 \div 10$

### F. Find the missing number.

$$\dots \times 2578 = 662546$$

### G. Solve the following.

1. The product of two numbers is 1479536. If one number is 356, find the other number.
2. Find the dividend if the divisor is 647, quotient 383 and remainder 55.
3. If any number is divided by 1000, the quotient will be \_\_\_\_\_ .  
remainder will be \_\_\_\_\_ .



### H. Solve the following.

1. There are 59775 notebooks to be distributed among 625 students. How many notebooks will each student get ?
2. A stadium has a capacity of 126600 people. There are 60 rows. How many people can seat in each row ?
3. A packet of biscuits contains 30 biscuits. Mohan purchased 38 packets of biscuits. Mohan has 5 family members. Each member takes 10 biscuits per day. In how many days will the biscuits be consumed ?
4. There are 73760 apples to be distributed among 2235 students. How many apples will each student get and how many apples will be left over ?
5. A packet of chocolates contains 10 chocolates. Mohan has 50 friends. How many packets of chocolates Mohan needs so that each friend gets one chocolate ? If the cost of one packet of chocolates is ₹ 450.00, how much money Mohan needs to buy the chocolates ?

### AVERAGE

- (a) Sumit scored an *average* of 60 runs over the last 3 matches.
- (b) Somya studied for an *average* of 2 hours every day last week, at her house.



To understand the meaning of the word 'average' look at the examples below.

(a)	Score	
	Match 1 – 25	
	Match 2 – 80	
	Match 3 – 75	
	<u>180</u>	Total runs in 3 matches

If we divide the total number of runs with the total number of matches, we find the *average* number of runs of each match.

$$\begin{array}{r} 60 \\ 3 \overline{) 180} \\ \underline{-180} \\ 0 \end{array}$$

**Average = sum of quantities ÷ number of quantities**

Average run rate = 60 runs



The cricketer did not score 60 runs in each match. The average number need not be one of the numbers in the group.

Look at the next example.

		Hours of study		
(b)	Mon	– 2 hours		
	Tue	– 4 hours	2	
	Wed	– 3 hours	7) 14	Average number of hours studied daily - 2 hours
	Thu	– 0 hours	– 14	
	Fri	– 0 hours	— 0	
	Sat	– 3 hours		
	Sun	– 2 hours		
	7 days	14 hours		

**Example :**

An average of 123 umbrellas per month were sold over the monsoon months of June, July and August. How many umbrellas were sold in all ?

**Solution :** Each month has an average sale of 123 umbrellas. So,  
 June+July+August = 123+123+123 OR  $123 \times 3 = 369$   
 369 umbrellas were sold in all.

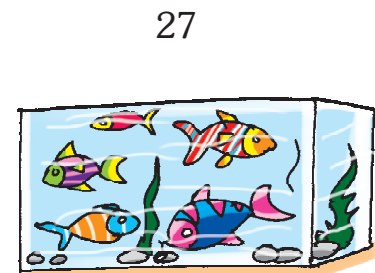
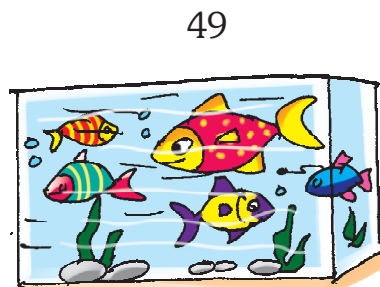
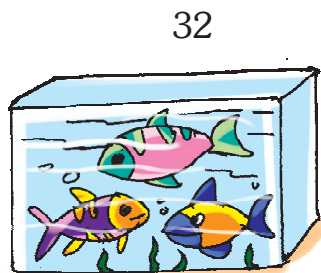


**Exercise 3.4**

**A. Find the average of the following.**

1. 14, 15, 21, 30
2. ₹ 8, ₹ 15, ₹ 14, ₹ 6, ₹ 12
3. 124 cm, 137 cm, 114 cm, 125 cm
4. 20 minutes, 15 minutes, 13 minutes, 12 minutes

**B. Find the average number of fish.**



**C. This table shows the number of newspapers collected by students of classes 1, 2, 3, 4 and 5 to donate to the animal shelter over the month of December.**

Classes	1st week	2nd week	3rd week	4th week	Total collection	Average weekly collection
Class 1	48	59	85	72		
Class 2	81	73	98	100		
Class 3	45	54	52	61		
Class 4	90	85	110	99		
Class 5	138	120	161	109		

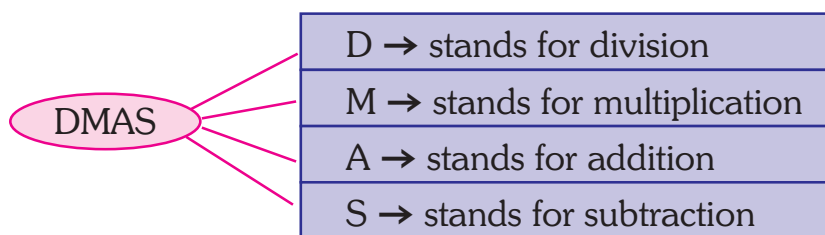
1. Find the total collection of each class. Then find their average collection.
2. Which class has the highest average ?
3. Which class has the lowest average ?
4. Find the average of all the 5 classes.

**D. Sahil, Akshat, Shiva and Anshul got an average of 95 points in a spelling competition. What was their total score ?**

**E. A travelling salesman travelled 80 km, 54 km, 86 km, 41 km and 64 km in the first 5 days of a week. What was the average distance travelled by him ?**

### FOUR OPERATIONS TOGETHER

When four operations are given in a question to be performed together, follow the DMAS rule.



Which means first divide, then multiply, next add and finally subtract to get the answer.

**Example :** **Solve :**  $65 + 30 \div 5 \times 7 - 41$

**Follow the DMAS rule :**

Step 1 : First divide :  $30 \div 5 = 6$

Step 2 : Then multiply :  $6 \times 7 = 42$

Step 3 : Next add :  $65 + 42 = 107$

Step 4 : Finally subtract :  $107 - 41 = 66$

**Answer :** 66

**Example :** **Solve :**  $300 - 100 + 375 \div 25 \times 35$ .

**Follow the DMAS rule :**

Step 1 : First divide :  $375 \div 25 = 15$

Step 2 : Then multiply :  $15 \times 35 = 525$

Step 3 : Next add :  $300 + 525 = 825$

Step 4 : Finally subtract :  $825 - 100 = 725$

**Answer :** 725

## HOTS

During summer vacation, Aman reads 5 more books than his sister. If they read 23 books together, how many books did Aman read ?

## ESTIMATION IN OPERATIONS

We have earlier learnt that estimation is done for quick calculations. Estimation has to be made properly, so that we get a result close to actual calculation.

### Estimating the addition

**Example :** There are 1213 pink teddies and 875 red teddies in a teddy shop. What is the total teddies in the shop ?

**Solution :**

#### Actual figure

Pink teddies 1213

Red teddies 875

Actual 2088.

#### Estimated figure

1200 (Round off to the nearest 100)

900 (Round off to the nearest 100)

Estimated 2100.

The figures are close but addition in estimation is done very quickly.



### Estimating the difference

**Example :** 58,190 balls are produced in a factory. 27,840 are sold. How many balls are left ?

**Solution :**

#### Actual figure

Balls produced	58,190
Sold	<u>27,840</u>
Left	30,350

#### Estimated figure

58,000 (Round off to nearest 1000)
<u>28,000</u> (Round off to nearest 1000)
30,000

### Estimating the product

**Example :** One truck can carry 35780 bricks. How much load can 12 trucks carry ?

**Solution :**

#### Actual figure

Carrying capacity	35780 bricks
No. of trucks	<u>12</u>
Total load	4,29,360

#### Estimated figure

40,000 bricks (Round off to nearest 10000)
<u>10</u> (Round off to nearest 10)
4,00,000 bricks

### Estimating the quotient

**Example :** 146 apples are packed in one carton. How many cartons are needed to pack 35770 apples ?

**Solution :**

#### Actual figure

Number of apples	35770
One carton can pack	146
$35770 \div 146 =$	245
Cartons are needed.	

#### Estimated figure

36000 (Round off to nearest 1000)	
150 (Round off to nearest 10)	
$36000 \div 150 =$	240
Cartons are needed.	

## Exercise 3.5

### A. Simplify.

- $405 + 125 \div 25 \times 26 - 127$
- $316 - 108 + 315 \div 45 \times 157$
- $169 \div 13 \times 23 - 200 + 205$
- $300 \times 25 + 375 - 256 \div 16$

### B. Solve the following and find the actual and estimated answers.

- There are 15787 trees in a forest. 1635 trees were cut. How many trees are left in the forest ?
- Sumitra had ₹ 1,55,235 in bank. She withdrew ₹ 15,560.00 and deposited ₹ 18,300.00 on the next day. What is the balance amount Sumitra had in her bank account ?
- A pack of bread had 34 slices. How many slices of bread will be there in 582 such packs ?
- A chocolate box contains 45 chocolates. How many chocolate boxes are required to fill up 5204 chocolates ?

# WORKSHEET

## A. Find the sum of the following.

1. 92435871 and 6945207
2. 75639820 and 82735064
3. 64736380 and 73593018
4. 78153014 and 35689517

## B. Subtract.

1. 3659874 from 8549965
2. 58946712 from 99025859
3. 78145637 from 98153414
4. 7814567 from 8145679

## C. Find the product.

1.  $894526 \times 789$
2.  $6789 \times 1234$
3.  $1456 \times 347$
4.  $891456 \times 345$
5.  $3896 \times 485$
6.  $59142 \times 586$

## D. Divide and check the answer.

1.  $458276 \div 312$
2.  $30450 \div 63$
3.  $347815 \div 72$
4.  $445674 \div 58$
5.  $86429 \div 38$
6.  $900485 \div 63$

## E. Simplify.

1.  $715 - 30 \times 625 \div 25 + 234$
2.  $750 \div 50 \times 60 + 207 - 568$
3.  $375 \div 25 + 606 \div 6$
4.  $540 - 35 \div 7 + 9 \times 5$
5.  $225 \div 15 + 305 - 108 + 5$
6.  $54 \times 10 \div 2 + 3 + 860$

## F. Find the actual and estimated answer.

1. 12580 books were there in a school library. 5895 books were added. What is the total number of books available in the school library ?
2. In a bookshop there were 5080 pencils in stock on Monday. On Tuesday 1960 pencils were sold. How many pencils are left ?
3. A pack of files contains 37 files. How many files will be there in 56 such packs ?
4. A school raises ₹ 84320.00 towards donation from 2108 students. What is the contribution of each student ?

## MATHS LAB

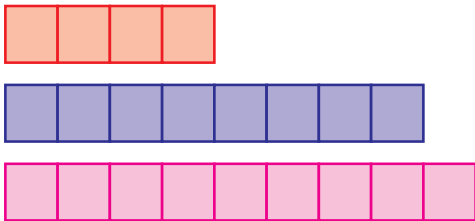
**Objective :** To find the average of 4, 8 and 9

**Materials Required :** Square-lines paper of three different colours from your Math kit.

**Preparation :** Students may work in pairs.

### Method :

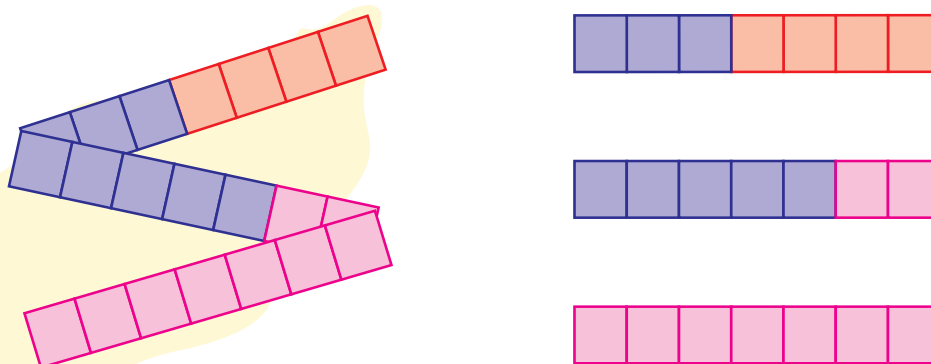
1. The teacher will write three or more numbers on the blackboard, say 4, 8, 9.
2. The first student cuts the strips in 3 different colours.



3. The second student now sticks the 3 strips with the help of sellotape to make one long strip.



4. The second student then folds and cuts the long strip into **3 equal parts**.



5. They record the length of each strip. Each strip is 7 squares long. **So, the average of 4, 8 and 9 is 7.**
6. The activity will be repeated with the different set of numbers. This time partners will change their turn.