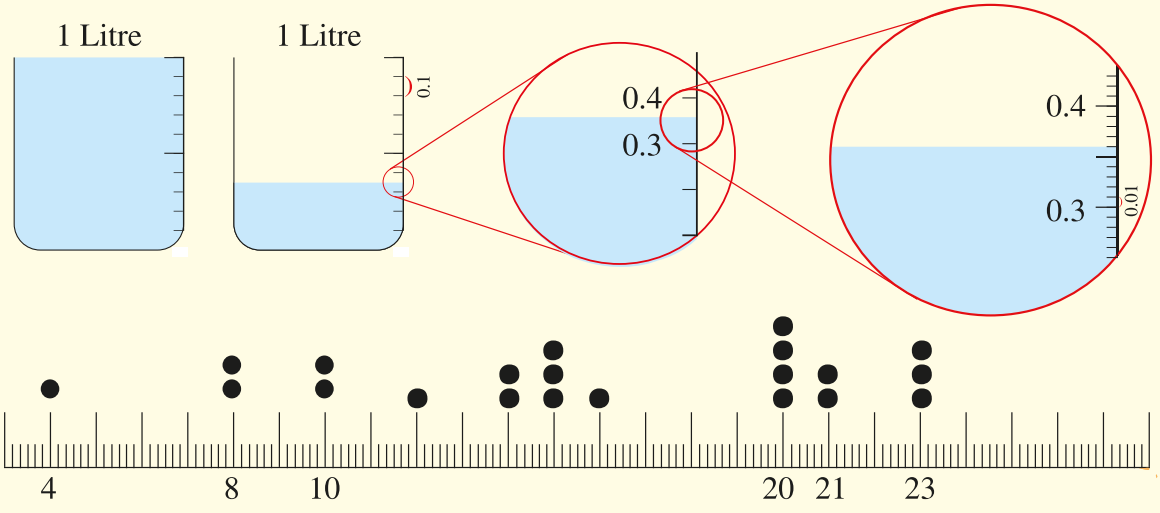
Elementary Mathematics

Class Five







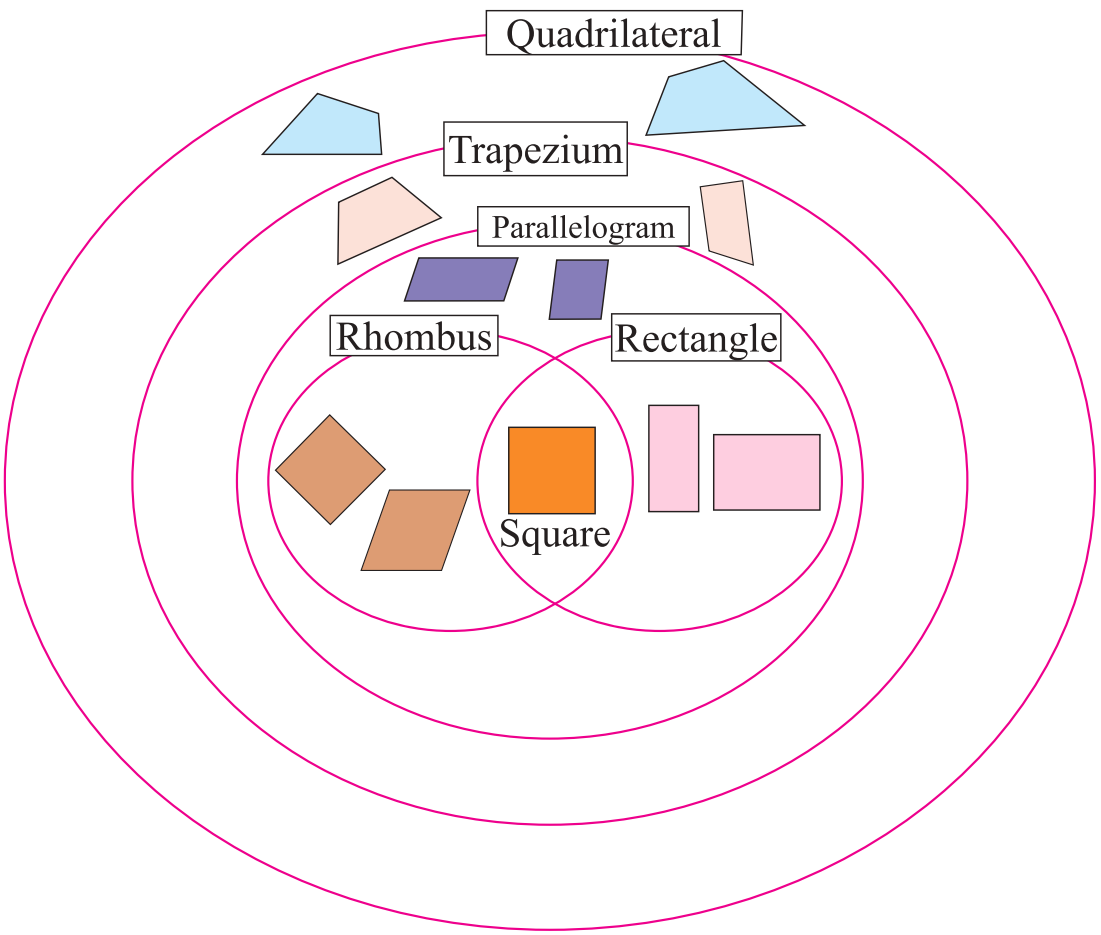
National Curriculum and Textbook Board, Bangladesh

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as a textbook for Class Five from the academic year 2026

Elementary Mathematics

Class Five

(Experimental Edition)



National Curriculum and Textbook Board, Bangladesh

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Preface

Primary education bears paramount importance in national life. Equal opportunities have been created for all children in the country to receive quality primary education irrespective of ethnicity, socio-economic status, physical and mental limitations, or geographical location. A key objective of primary education is to foster humanitarian values, follow a curriculum and textbooks tailored to the local environment and resources, and create a joyous and congenial school environment to facilitate the physical and mental development of children.

In light of the National Education Policy 2010, the National Curriculum and Textbook Board (NCTB) has adopted an integrated curriculum to make primary education more contemporary. Curricula of different countries have been reviewed and teaching learning values have been incorporated in the context of Bangladesh. This has provided a practical foundation for making education more life-oriented and effective. In the context of globalization, the psychological state of children has been given special consideration. Considering the needs and opinions of stakeholders in the changed context, necessary revisions were made in 2025 to the National Curriculum 2021 (Primary Level). In this light, textbooks for Class One to Three have already been revised, and the textbook for Class Five has been developed.

The textbook is the most important component of curriculum implementation. Prioritizing this, the NCTB is always diligent in developing textbooks for every level and grade. In the writing and editing of each textbook, the curriculum's goals and objectives have been focused upon. Careful attention has been paid to the diverse interests and cognitive capabilities of children. Special importance has been given to textbook development to ensure teaching-learning activities become a joyful experience. It is hoped that each textbook will contribute to the balanced psycho-physical development of children. At the same time, it will facilitate their acquisition of desired skills, adaptability, patriotism, and moral values.

In developing the *Elementary Mathematics* textbook for Class Five, continuity with previous classes has been maintained. In developing the textbooks from Class One to Class Five, efforts have been made so that students can meet their fundamental learning needs by acquiring essential knowledge, subject-based skills, attitudes, and values. The informational and descriptive content in the textbooks for all five classes maintains continuity.

This textbook has been developed and revised under the direct supervision of the Primary Curriculum Wing of the National Curriculum and Textbook Board. Sincere thanks and gratitude are extended to all the class teachers, teacher trainers, pedagogues, curriculum specialists, subject experts, artists, and graphic designers who contributed their intellect and labor at various stages of the textbook's development, rational evaluation, finalization, and coordination. Thoughtful opinions and suggestions from all concerned for improving the textbook will be considered with importance.

September 2025

Professor Robiul Kabir Chowdhury
Chairman (Additional Charge)
National Curriculum & Textbook Board, Bangladesh

Explanation of the characters and symbols

1) Character: A dialogue between two students named Rafi and Tuli and comment by a parrot is shown in the textbook. The mathematical idea of the students would be clear through their discussion and opinion.



Rafi



Tuli



Parrot

2) The steps have been indicated by using some symbols in the lesson.

Key question: Let us solve the problem together.

Task: Let's solve the problem after discussing with the friends and teacher.

Exercise: Solve the problem by logical thinking. Discuss with the friends and take assistance from the teacher if required.

Let us do : Let us do it ourselves.

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Name: .....

Name of the School: .....

Class: ..... Section: .....

Roll No: .....

Chapter 1

Multiplication and Division

Multiplication

If 4614 vehicles travel across a bridge daily, how many vehicles will travel in a year?



One year is equal to 365 days. I think the number of vehicles travelling in 1 day should be multiplied by 365.

You are right. In grade 4, we have learnt how to multiply four-digit numbers by three-digit numbers.

Mathematical sentence is

4614 × 365 = ☐

4614 × 5	23070
4614 × 60	276840
4614 × 300	1384200
	1684110

1684110 vehicles travel in 1 year.

We have learnt about multiplicand, multiplier and product in grade 4. Do you remember?

Here, multiplicand is 4614
Multiplier is 365
Product is 1684110

1 In a month, a wholesaler sold 972 mobile phones each of which cost 8536 taka. How much money has he earned by selling the mobile phones in that month?



We have learnt in the previous class that if we know the price of one item, then we can find the price of a certain number of that items by multiplying.

Mathematical sentence is $8536 \times 972 =$ ☐

			8	5	3	6	
			×	9	7	2	
		1	☐	0	☐	☐	
	5	☐	☐	5	☐	0	
☐	☐	8	2	☐	0	0	
☐	☐	☐	☐	☐	☐	☐	



He has sold the mobile phones worth ☐ taka in total.

2 Following the above method, let us multiply 4765 by 2354 vertically.

			4	7	6	5		
			×	2	3	5	4	
			☐	9	☐	☐	0	← ☐ × ☐
		2	☐	☐	☐	5	0	← ☐ × ☐
	☐	☐	2	☐	5	0	0	← ☐ × ☐
	9	☐	☐	0	0	0	0	← ☐ × ☐
1	☐	☐	☐	6	☐	☐	0	

1 Multiply 93462 by 3652

3 Put the numbers in the blanks.

(1)

		8	3	4	6
	×	1	5	4	5

(2)

		6	2	5	8
	×	6	0	9	7

(3)

			5	5	7	□	
		×	4	□	7	7	
		□	9	0	5	3	
	3	9	0	5	3	0	
3	3	4	□	4	0	0	
2	2	3	1	6	0	0	0
2	6	0	□	2	9	8	3

(4)

			7	7	□	2	3
			×	□	5	6	7
		5	4	4	0	6	1
	□	6	6	3	3	□	0
3	8	8	□	1	5	0	0
3	□	0	8	9	2	0	0
3	5	□	9	6	□	9	4

2 Multiply vertically.

(1) 4635 × 2135

(2) 87765 × 2972

(3) 5893 × 3767

(4) 69029 × 5547

(5) 73528 × 5837

(6) 9574 × 4606

(7) 63929 × 4597

(8) 93188 × 5931

(9) 6972 × 9712

4 Following the method given below, let us multiply horizontally.



We can breakdown the multiplier and then multiply horizontally.

(1) 6042 × 1514 = 6042 × (1000 + 500 + 10 + 4)

= 6042 × 1000 + 6042 × 500 + 6042 × 10 + 6042 × 4

= ☐ + ☐ + ☐ + ☐

= ☐



We can also breakdown the multiplicand and then multiply horizontally.

(2) 6042 × 1514 = (☐ + ☐ + ☐) × ☐

= ☐ × ☐ + ☐ × ☐ + ☐ × ☐

= ☐ + ☐ + ☐

= ☐



The product is not changed if we break down multiplicand or multiplier and then multiply.

3 Let us multiply horizontally.

(1) 3407 × 1406 (2) 3356 × 2247 (3) 82836 × 3576

(4) 8765 × 2354 (5) 51109 × 4602 (6) 6042 × 2524

How do we multiply 7400 × 2900?



Let us find out a simple method of multiplication where the multiplicand and multiplier have 0s in both ones' and tens' place.

74	×	29	=	2146	
⇩ × 100				⇩ × 100	⇩ × 10000
7400	×	29	=	214600	
		⇩ × 100		⇩ × 100	
7400	×	2900	=	21460000	



In grade 4, we did the same type of multiplication. To find the answer of 7400 × 2900, let us apply '74 × 29'.



I think we can also calculate in the following way.



$$
\begin{aligned}
&7400 \times 2900 \\
=\ &74 \times 100 \times 29 \times 100 \\
=\ &74 \times 29 \times 100 \times 100 \\
=\ &2146 \times 10000 \\
=\ &21460000
\end{aligned}
$$

1 Let us try to multiply 49730 × 9800 in a simple method. In this case, we can apply '4973 × 98 = 487354' for doing the vertical calculation.

4973	0
× 98	00
39784	
447570	
487354	000

There are total three 0s at the end of multiplicand and multiplier. So, three 0s will be placed at the end of the product.



1 Multiply.

(1) 3400 × 410 (2) 3300 × 200 (3) 82000 × 3500

(4) 16000 × 9020 (5) 30000 × 3200 (6) 48000 × 4050

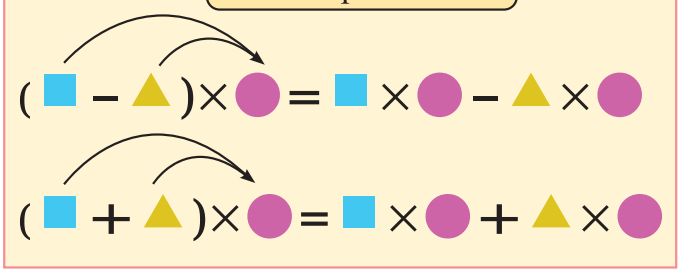
How can we multiply 99/999/9999 by another number in the simple method?

1 (1) 99 × 24 = (100 – 1) × 24

= ☐ × 24 – ☐ × 24

= ☐ – ☐ = ☐

The Simple Method



(2) 999 × 32 = (1000 – 1) × 32

= ☐ × 32 – ☐ × 32

= ☐ – ☐ = ☐

(3) 9999 × 98725 = (☐ – 1) × 98725

= ☐ × ☐ – ☐ × ☐

= ☐ – ☐ = ☐

1 Multiply by using the simple method.

(1) 999 × 410 (2) 990 × 3500 (3) 9999 × 200

(4) 9990 × 4600 (5) 1100 × 277 (6) 101 × 45

2 Some blankets were distributed among 89753 cold-affected families. If the price of each blanket was 1999 taka, how much money was spent in total for buying the blankets?



89753 × 1999 = ☐



I thought in this way.

89753 × 1999 = 89753 × (☐ − ☐)

We can also think in this way.

89753 × 1999 = 89753 × (☐ + ☐ − ☐)



To buy the blanket ☐ taka was spent.



Let us think if we can solve the problem in different ways.

2 Make a mathematical story with 12100 × 475 = ☐ and solve it.

Mathematical story

Solution

Division

In a school, the teachers collected 4,275 taka to buy educational materials for underprivileged students. The collected money was distributed equally among 45 students. How much money did each student receive?





It must be distributed equally among 45 students. For this, we need to do the division.

The mathematical sentence will be 4275 ÷ 45 = ☐



$$
\begin{array}{r}
95 \\
45\overline{)\,4275} \\
-\,405 \\
\hline
225 \\
-\,225 \\
\hline
0
\end{array}
$$

42 cannot be divided by 45, so we have to consider first 3 digits, which is 427



The quotient is 95, that is, each student will receive 95 taka as financial assistance.

We have learnt about dividend, divisor, quotient and remainder in grade 4.



1 Divide.

(1) 3822 ÷ 42 (2) 3432 ÷ 66 (3) 2553 ÷ 69

(4) 3952 ÷ 76 (5) 4161 ÷ 73 (6) 4012 ÷ 59

1 Let us divide 6674 by 214

```
        3
  ------------
214)6674
   642
  ------------
     25
```



Since the divisor is a 3 digit number, let us consider the first 3 digits from the left of 6674. Here 214 × 3 = 642 which is smaller than 667. So, 3 will be placed in the tens place of the quotient. Then place 642 under 667 according to place values, and subtract.

```
        3  1
  ------------
214) 6 6 7 4
     6 4 2
  ------------
       2 5 4
       2 1 4
  ------------
         4 0
```

According to the figure beside, let us bring down 4 on the right of the difference. Thus, we complete the division and get 40 as the remainder.



Method of verification

Let us verify the answer according to the formula below

Divisor × Quotient + Remainder = Dividend

Quotient 31 and remainder 40



If the dividend were 40 less, then the dividend would be exactly divisible by the divisor.

Divisor 214 × Quotient 31 + Remainder 40

= 6634 + 40 = Dividend 6674 ⇒ correct



Remainder is always smaller than divisor.

2 Divide.

(1) 9455 ÷ 45 (2) 7542 ÷ 55 (3) 9485 ÷ 39

2 Let us divide 69738 ÷ 245

```
        2
245) 6 9 7 3 8
     4 9 0
     -------
       2 0 7
```



Since the divisor 245 is a three-digit number, let us consider the first three digits of 69738. Here 245 × 2 = 490 is smaller than 697 and 245 × 3 = 735 is larger than 697. Therefore, 2 will be placed in the hundreds place of the quotient. Then subtract 490 from 697 according to place values.

```
        2 8
245) 6 9 7 3 8
     4 9 0 ↓
     -------
       2 0 7 3
       1 9 6 0
     -------
         1 1 3
```

According to the figure beside, let us bring down 3 on the right of the difference and solve the division in the same method.



```
        2 8 4
245) 6 9 7 3 8
     4 9 0
     -------
       2 0 7 3
       1 9 6 0 ↓
     -------
         1 1 3 8
           9 8 0
     -------
           1 5 8
```

Quotient is 284 and remainder is 158

Let us verify the answer

Divisor × Quotient + Remainder = Dividend

3 Fill in the blanks.

(1)

```
          7  1
1 3 9) 9 □  5  3
       □ 7  3
     -------
         2 □  3
         1  3 □
     -------
            8 □
```

(2)

```
            6 □
3 2 5) 2  0  4  7  5
       1 □  5 □
     -----------
          9  7 □
          9 □  5
     -----------
                0
```

(3)

```
          2 □
□ 3) 4 □  0
     4  6
     -------
        □  0
           0
     -------
        1  0
```

2026

3 Divide.

(1) 4452 ÷ 42 (2) 25748 ÷ 98 (3) 4592 ÷ 179

(4) 31160 ÷ 328 (5) 42138 ÷ 203 (6) 64256 ÷ 278

(7) 33408 ÷ 288 (8) 6480 ÷ 108 (9) 74088 ÷ 196

(10) 8350 ÷ 167 (11) 46854 ÷ 411 (12) 4275 ÷ 225

4 Check and write in the blank boxes whether it is correct or not.

(1) 38750 ÷ 127 = 305, remainder 15 ☐

(2) 42270 ÷ 152 = 278, remainder 26 ☐

(3) 53088 ÷ 316 = 165, remainder 0 ☐

(4) 64070 ÷ 298 = 215, remainder 0 ☐

(5) 86209 ÷ 188 = 458, remainder 105 ☐

4 Divide.

(1) 2412 ÷ 10 (2) 3264 ÷ 100 (3) 63973 ÷ 100

(1)
```
      241
  10)2412
     20
     ---
      41
      40
     ---
       12
       10
     ---
        2
```

(2)
```
      32
 100)3264
     300
     ---
      264
      200
     ---
       64
```

(3)
```
      639
 100)63973
     600
     ---
      397
      300
     ---
       973
       900
     ---
        73
```

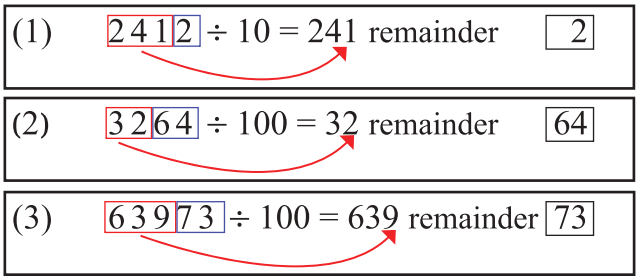


Wow! When dividing by 10 or 100, the number of 'zeros' in the divisor determines how many digits from the right of the dividend are omitted, and the remaining number becomes the quotient.

Oh, how interesting! The number formed by the omitted digits of the dividend is the remainder.



5 Look at the three boxes below. Can we find any relation among dividend, divisor, quotient and remainder? Let us discuss in groups.



6 Without calculating the divisions, let us circle the quotient and underline the remainder. For example

$\underline{3872} \div 10$

(1) 92605 ÷ 100 (2) 67680 ÷ 10 (3) 72832 ÷ 100

5 Divide.

(1) 536 ÷ 10 (2) 360 ÷ 10 (3) 4970 ÷ 100

(4) 6400 ÷ 100 (5) 57560 ÷ 100 (6) 92600 ÷ 100

7 150 employees work in a biscuit factory. They have made a profit of taka 4680000 in a year.

(1) How much profit does the factory make per month?

(2) How much money will each employee receive if the profit made in 1 year is divided among them?

Solution

(1) If we divide Tk. 46,80,000 by 12, then profit per month is

☐ ÷ ☐ = ☐ taka

(2) If we divide Tk. 46,80,000 by 150, then each employee gets

☐ ÷ ☐ = ☐ taka

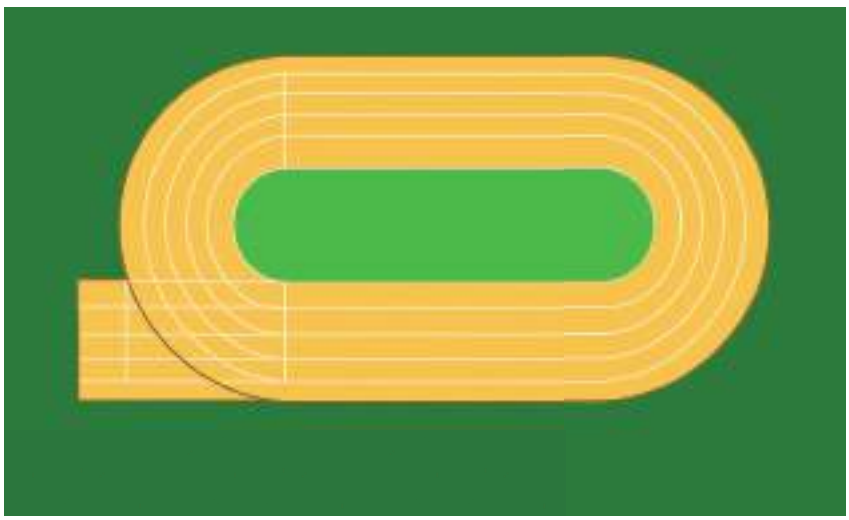
8 For repairing a dam of a village, the villagers have decided to collect the equal amount of money from each family. There are 275 families in the village, and 96250 taka is needed for repairing the dam. How much money will each family donate?

If we divide 96250 taka by the number of families 275, then

96250 ÷ 275 = ☐

Therefore, each family will donate ☐ taka.

9 In a race competition, the length of one round is 900 metres. In which round will a runner complete a distance of 10000 metres? (We will write the answer in ordinal numbers.)



If we divide 10000 metres by 900 metres, then

10000 ÷ 900 = quotient ☐ remainder ☐.

After completing ☐ th round, ☐ metres will remain.

Therefore, the distance of 10000 metres will be completed after

☐ + ☐ = ☐ th round.

6 A person saves Tk.1200 every month. In which month will his total savings exceed 50000 taka?

Let us try

(1)

	8	3	2	4
×	3	1	3	6

(2)

6	8	7	)	3	8	5	0	0	

(3) For repairing a village road, the villagers have decided to collect money. There are 3392 families in the village. If each family contributes 780 taka, how much money will it be in total?

$\square \times \square = \square \times (\square + \square)$

$= \square \times \square + \square \times \square$

$= \square + \square$

$= \square$

(4) Dividend $= \square \times$ quotient $+ \square$

(5) $63973 \div 100$; here, quotient $\square$ and remainder $\square$

(6) $9900 \times 5872 = (\square - \square) \times \square$

$= \square \times \square - \square \times \square$

$= \square - \square$

$= \square$

Let us do

1 Put a tick mark (√) on the correct answers.

(1) If the digit in the ones place of the product 713×1 ☐ is 5, what will be the digit in the blank?

a) 3 b) 4 c) 5 d) 6

(2) What is the product of the largest and the smallest numbers formed by the digits 0, 1 and 2 using only once.

a) 630 b) 2520 c) 21420 d) 22622

(3) There are 1350 students in a school. How much money will it be in total if each student contributes 200 taka in the poor fund?

a) 27000 taka b) 270000 taka c) 260000 taka d) 2700000 taka

(4) What is the remainder of 98765÷100?

a) 98 b) 987 c) 765 d) 65

(5) Which relation is true in case of division?

a) divisor < remainder b) remainder < divisor
c) divisor = remainder d) dividend < remainder

(6) 225 ÷ ☐ = 9, what is the number in the blank?

a) 9 b) 15 c) 25 d) 225

(7) Mr. Taleb spends 98400 taka for house rent in a year. How much money does he spend for the house rent in a month?

a) 8400 taka b) 8200 taka c) 8020 taka d) 820 taka

2 Multiply horizontally.

(1) 5968 × 497 (2) 9547 × 865 (3) 6754 × 2689

(4) 9879 × 3985 (5) 79987 × 42749 (6) 26588 × 9999

3 Divide.

(1) 54001 ÷ 907 (2) 20387 ÷ 406 (3) 73300 ÷ 600

(4) 53362 ÷ 230 (5) 43932 ÷ 523 (6) 84862 ÷ 574

4 Multiply vertically.

(1) 8867 × 576 (2) 8748 × 469 (3) 88700 × 910

(4) 76903 × 9048 (5) 58988 × 76639 (6) 6870 × 5800

5 Multiply by the simple method.

(1) 199 × 25 (2) 7240 × 110 (3) 4520 × 998 (4) 6520 × 1001

6 Divide by the simple method.

(1) 67458 ÷ 100 (2) 82500 ÷ 10 (3) 90865 ÷ 100 (4) 85200 ÷ 100

7 Check whether it is true or false.

(1) 29845 ÷ 293 = quotient 101, remainder 252

(2) 39493 ÷ 321 = quotient 123, remainder 10

(3) 97500 ÷ 186 = quotient 523, remainder 222

8 There are 98000 grams of rice in a house. If the family members consume 650 grams of rice every day, on which day will the rice run out? (Answer in an ordinal number.)

9 To prepare a book, 138 sheets of papers are needed. How many books can be prepared by 70000 sheets of papers?

10 Mr. Shafiq has donated 750 notes of five hundred taka among the poor in his village. How much money did he donate?

11 Rakhi saves 950 taka per month. On which month will her savings exceed 50000 taka? (Answer in an ordinal number.)

12 For setting up a poultry farm, Asad has bought 345 pieces of broiler chickens at the rate of 225 taka per chicken. How much money has he spent?

13 560 copies of book can be kept in a bookshelf. How many such bookshelves will be required to keep 379680 copies of book?

14 An onion wholesaler has bought 1264 sacks of onion at the rate of 1880 taka per sack. He sold per sack at the rate of 2150 taka.

a) How much money has he spent to buy the onions?

b) How much profit has he made after selling the onions?

Chapter 2

Mathematical Sentences

48 litchis are divided among a few students equally so that each student gets 8 litchis.

(1) Write a mathematical sentence considering the number of students as A.

(2) Calculate the value of A.

1. The mathematical sentence is $48 \div A = 8$
2. For calculation, we can put different values such as 3, 4, 5, and 6 for A.



We can calculate it by putting the values in the place of A.

$48 \div 3 = 8$ ×
$48 \div 4 = 8$ ×
$48 \div 5 = 8$ ×
$48 \div 6 = 8$ √

We can solve the problem by the method of verifying the result of a division.

$8 \times A = 48$

What we can do to solve the problem is

$A = 48 \div 8 = 6$

$A = 6$



1 Represent the following sentences considering A as an unknown number.

1) Which number will we add to 35 to get the sum 52?

2) 32 chocolates were divided equally among a few students so that each student could get 8 chocolates.

2 Using A as an unknown number, write a mathematical sentence for each of the following description and calculate the value of A.

1) When we add 20 to a number, we get the sum 160

2) When we divide a number by 7, we get the quotient 5 and remainder 4

Let us express in a mathematical sentence and explain.
(1) The product is 24 when we multiply 6 by 4
(2) The sum of 25 and 4 is greater than 30
(3) When A is added to 9, the sum is 21

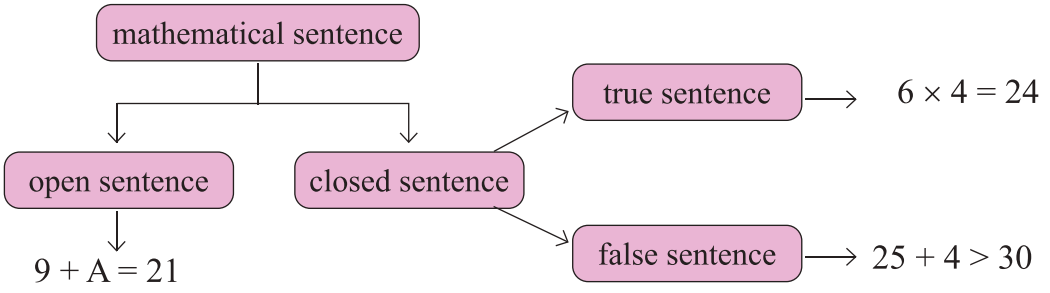


The mathematical sentences are
(1) $6 \times 4 = 24$
(2) $25 + 4 > 30$
(3) $9 + A = 21$

Among the mathematical sentences
- Case 1 is true
- Case 2 is false
- Case 3 is true/false depending on the value of A.



A mathematical sentence that cannot be determined to be true or false is called an open sentence. On the other hand, if a sentence can be determined to be true or false, it is called a closed sentence.



5 is an odd number.	This is a mathematical sentence and it is true.
12 is an odd number.	This is a mathematical sentence and it is false.
A can be divided by 5	It is an open sentence as it can be either true or false, which depends on the value of A.

1 Calculate the unknown values of the open sentences below to make the sentences true.

1) The number of sides of a quadrilateral is A.
2) I get a return of 85 taka from the shop after I have paid 500 taka for the rice costing A taka.
3) B number of pens are divided among 12 persons while each person gets 3 pens.

2 Determine such a value of C so that the sentences become true.

(1) $C + 12 = 19$ (2) $48 - C = 33$
(3) $8 \times C = 32$ (4) $81 \div C = 9$

1 The price of a tennis ball is 24 taka and the price of a cricket bat is 150 taka. 246 taka is paid to the shopkeeper after buying A number of tennis balls and 1 cricket bat. Let us form a mathematical sentence for the problem and solve it.

Mathematical sentence $A \times 24 + 150 = 246$

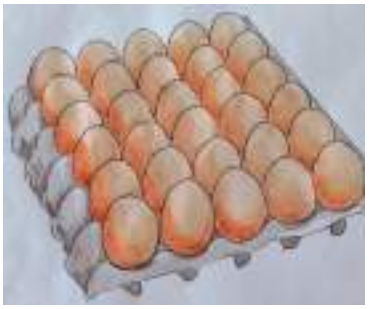
Let us put 1, 2, 3 and 4 respectively as the values of A in the blank boxes and check whether the mathematical sentence is true or false.

$\boxed{1} \times 24 + 150 = 246$ $24 + 150 = 246$ $174 = 246$	false	$\square \times 24 + 150 = 246$	
$\square \times 24 + 150 = 246$		$\square \times 24 + 150 = 246$	

1 Ayman bought A number of eggs from the market and paid the shopkeeper B taka in total. If the price of each egg is 12 taka, find out the answers to the following questions.

(1) Find the relation between A and B.

(2) Calculate the values of B when the values of A are 10, 11, 15.



2 Romena paid the shopkeeper B taka after buying A number of tissue boxes costing 48 taka each and the shopkeeper returned him 116 taka.

(1) Find the relation between A and B and write it in the blank box.

$\square \times \square = \square - \square$

(2) Calculate the value of B when the value of A is 5

$\square \times 48 = B - 116$

or, $\square \times 48 = B - 116$

or, $\square = B - 116$

or, $\square + \square = B - 116 + 116$

$\therefore \quad \square = B$

Order of Operations

How will we solve the following calculations?

$3 + \{(14 - 10) \times (20 - 15) + 30\} \div 25 - 4$



For this, we have to know about the order of operations.

Order of Operations

1. Calculate from left to right.
2. At first, do the multiplication or division that comes on the left. Then do the addition and subtraction.
3. At first, calculate the numbers inside the bracket if there is a bracket. First solve the numbers inside the round brackets ( ), then the curly brackets { }, and then the square brackets [ ].

1 $3 + \{(14 - 10) \times (20 - 15) + 30\} \div 25 - 4$
$= 3 + \{ 4 \times 5 + 30 \} \div 25 - 4$
$= 3 + \{ 20 + 30 \} \div 25 - 4$
$= 3 + 50 \div 25 - 4$
$= 3 + 2 - 4$
$= 1$

2 Calculate.

(1) $12 \div 2 \times 3$
$12 \div 2 \times 3$
$= 6 \times 3$
$= 18$

(2) $12 \div (2 \times 3)$
$12 \div (2 \times 3)$
$= 12 \div 6$
$= 2$

Use of brackets in the expression gives different values, isn't it?



1 Calculate.

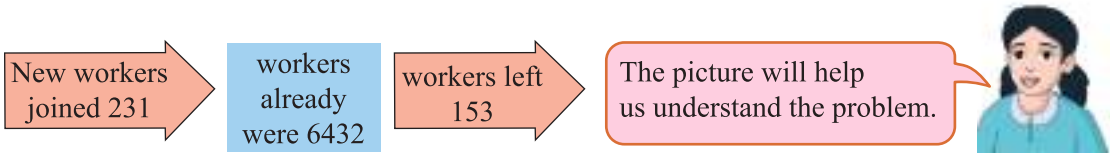
(1) $6 - (56 - 40) \div (2 \times 4) + 5$
(2) $7 + [\{ 45 \div 9 + 3 \} \times \{(12 - 7) \times 2 - 5 \} - 1] \div 13$
(3) $[\{ 10 \times (12 \div 4 - 1) - 2 \} - \{(6 \times 6 - 6) \div 2 \}] \div 3$

2 Do the following calculations.

(1) $\{ 24 - (3 \times 4)\} \div 2$

(2) $24 - 3 \times 4 \div 2$

3 6432 workers used to work in a garment factory. This year 231 new workers have joined the factory and 153 workers have left for another factory. How many workers are working in the factory now?



At present, the number of workers at the factory = ☐ + ☐ − ☐

= ☐ − ☐

= ☐

4 The cost of 3 dozen eggs and 5 hali bananas is 620 taka. If the price of 1 dozen eggs is 140 Taka, what is the price of one banana?

Using brackets, let us present the problem as a mathematical sentence and solve it.

The price of 1 banana = [{ ☐ − (☐ × ☐)} ÷ ☐] ÷ ☐ taka

= [{ ☐ − ☐ } ÷ ☐] ÷ ☐

= [☐ ÷ ☐] ÷ ☐

= ☐ ÷ ☐

= ☐ taka

So, the price of 1 banana is ☐ taka.

5 The total price of 1 dozen eggs and 5 chickens is 1395 taka. If the price of one egg is 10 taka, what will be the price of one chicken?

Using brackets, let us present the problem as a mathematical sentence and then solve it.

The price of one chicken = { ☐ − (☐ × ☐)} ÷ ☐ taka

= { ☐ − ☐ } ÷ ☐

= ☐ ÷ ☐

= ☐ taka

So, the price of one chicken is ☐ taka.

6 In the market, one kg of basmati rice is sold at 240 taka and one kg of moong dal is sold at 120 taka. If we buy 5 kg of rice and 3 kg of dal and give the seller 2000 taka, then how much money will I get as a return?



We can solve the problem in two ways.

Solution 1	Solution 2
Basmati rice $240 \times 5 = 1200$ Moong dal $120 \times 3 = 360$ Total $1200 + 360 = 1560$ Return $2000 - 1560 = 440$ I will get 440 taka back.	$2000 - (240 \times 5 + 120 \times 3)$ $= 2000 - 1560$ $= 440$ I will get 440 taka back.

7 The monthly salary of Mr. Mahmud is 35000. He spends 18000 taka on house rent and 15650 taka on household expenses per month. He saves the rest of the money at a bank. How much money does he save at the bank per year?

He saves at the bank $= \{\square - (\square + \square)\} \times \square$ taka

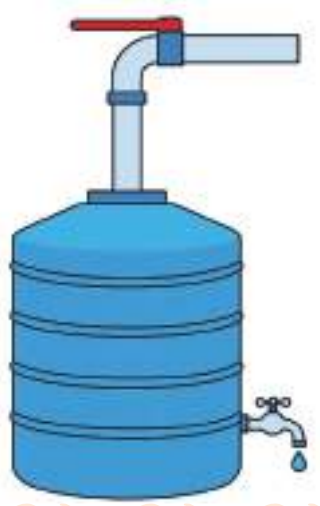
$= \{\square - \square\} \times \square$

$= \square \times \square$

$= \square$ taka

Therefore, he saves $\square$ taka at the bank.

8 In a water tank, 7 Litres of water are stored per minute and 3 Litres of water are used per minute. How many litres of water will remain in 12 minutes in the tank?



Water stored in the tank is

$(\square - \square) \times \square$ Litres

$= \square \times \square$

$= \square$ Litres

9 Four siblings, namely Amir, Helal, Fatema, and Jamil went to a furniture shop together. They bought 2 beds, 1 almirah, and 6 chairs according to the prices given in the picture below and made the payment, dividing the total cost equally among themselves. How much money did each of them pay?



Price 16450 taka



Price 27500 taka



Price 2800 taka

Each of them paid = (☐ × ☐ + ☐ × ☐ + ☐ × ☐) ÷ ☐

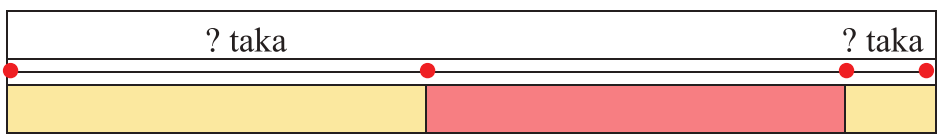
= (☐ + ☐ + ☐) ÷ ☐

= ☐ ÷ ☐

= ☐ taka ∴ Each of them paid ☐ taka.

10 Ayesha and Amena together have 12756 taka. Ayesha has 1120 taka more than Amena. How much money does each of them have?

12756 taka



Amena possesses the half of (12756- 1120) taka.

Amena possesses (12756 – 1120) ÷ 2 = ☐ taka

Ayesha possesses 1120 taka more than Amena does.

Let's check.

☐ + ☐ = 12756

Correct.



Therefore, Ayesha possesses ☐ + ☐ = ☐ taka

Amena possesses ☐ taka, Ayesha possesses ☐ taka.

We can also solve the problem in a different way.



11 The sum of the ages of mother and daughter is 56 years. Mother's age is 3 times her daughter's age. How old are the mother and daughter?

<table>
<tr><td colspan="4">56 Year</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>daughter</td><td colspan="3">mother</td></tr>
</table>

The mother's age is 3 times the daughter's age.

The sum of the ages of mother and daughter = the daughter's age+ 3 times the daughter's age [according to the picture]

or, ☐ = 4 times the daughter's age

or, ☐ = daughter's age × 4

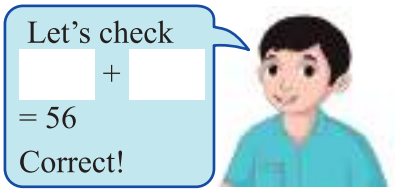
or, ☐ ÷ 4 = daughter's age × 4 ÷ 4

or, ☐ = daughter's age

∴ Daughter's age = ☐ years

Then mother's age = ☐ × ☐

= ☐ years



Therefore, mother's age is ☐ years and daughter's age is ☐ years.

3 Poli and Rajan together have 18650 taka. Poli has 1680 taka less than what Rajan has. How much money does each of them have individually?

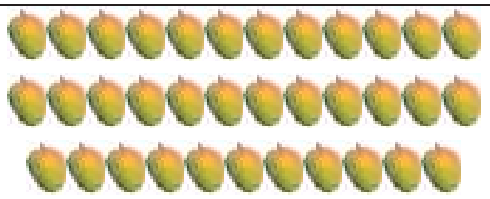
4 Abir went to the market with 500 taka. He bought 2 kg potatoes at the rate of 60 taka, 1 kg pointed gourd at the rate of 50 taka and 1 kg eggplants at the rate of 55 taka. After paying the price at the grocery shop, he bought fish for 220 taka. How much money is left with him?

Unitary Method

The price of 12 mangoes is 264. How much money is needed to buy 35 mangoes?



At first, let's determine the price of 1 mango.

	Price of 12 mangoes	➡	264 taka
	⬇ Price of 1 mango	➡	264 ÷ 12 taka
	⬇ Price of 35 mango		264 ÷ 12 × 35 taka

We want to find the price of 50 mangoes.

The price of 12 mangoes is 264 taka

The price of 1 mango is ☐ ÷ ☐ = ☐ taka

The price of 50 mangoes is ☐ × ☐ = ☐ taka

We have done division as the price of 1 mango is less than the price of 12 mangoes.



Unitary method is a process by which we first calculate the value of a single unit and then using that we calculate the value of multiple units.

1 Tania bought 8 oranges by 192 taka. Let us find out how much money he would need if he bought 3 oranges.

The price of 8 oranges is 192 taka

The price of 1 orange is ☐ ÷ ☐ taka

The price of 3 oranges is ☐ ÷ ☐ × ☐ taka

= ☐ × ☐ = ☐ taka

In the unitary method, let's keep the unknown value on the right.



1 Mr. Rahim bought 5 green coconuts for 600 taka from the market. How much money would he spend if he bought 12 green coconuts?

2 Raisa bought 8 pens for 64 taka. How much money would she need for buying 24 pens?

The price of 1 pen is

$\square \div \square = \square$

The price of 24 pens

$\square \times \square = \square$

The price of 24 pens is $\square$ taka.

3 A weaver can weave 24 metres of cloth in 3 days. Now let us fill in the blanks in the chart after getting the answers to the following questions.

(1) How many metres of cloth can the weaver weave in 6 days?

(2) If the weaver weaves 256 metres of cloth in 32 days, how many metres can he weave in half of that time?

(3) If he weaves 160 metres of cloth in 20 days, how many metres of cloth can he weave in 5 days?



3×2 6×4

Day	1	2	3	4	5	6	8	10	12	15	16	20	24	32
Cloth (m)			24				64	80				160		256

24 ÷ 3 160 ÷ 4 256 ÷ 2



First let's calculate the length of the cloth that he can weave in one day.

I think you have seen that if the length of weaving cloth is 2, 3, . . . the number of days will be 2, 3, 4 . . . times as well.



4 If 8 persons need 2 days to dig a well, then how many days will need for 2 persons to dig the same well?

To dig a well 8 persons need 2 days

To dig a well 1 persons need 8×2 days

To dig a well 2 persons need $8 \times 2 \div$ ☐ days

$= \square \div \square = \square$ days



5 Rafiq's family has some amount of rice. 6 members of his family can consume that amount of rice in 24 days. If the family had 3 members, then how many days would it take for them to consume the same amount of rice?

Solution

6 members can consume the rice in 24 days

1 member can consume the rice in ☐ × ☐ days

3 members can consume the rice in ☐ × ☐ ÷ ☐ days

$= \square \div \square$

$= \square$ days

So, they can consume the rice in ☐ days.

2 Riya bought 24 pencils from a shop for 288 taka. Determine the amount she would have to pay for 36 pencils.

6 An entrepreneur makes profit of 200 taka by investing 2000 taka. How much investment is needed to make a profit of 500 taka ?

The profit is 200 taka for investment of 2000 taka

The profit is 1 taka for investment of ☐ ÷ ☐ taka

The profit is 500 taka for investment of ☐ ÷ ☐ × ☐ taka

$= \square \times \square$

= investment of ☐ taka

An investment of ☐ taka has to be made.

Let us try

1. Calculate $78 - [\, 56 + \{\, 165 - (48 \div 6 \times 9) \times 2 \,\}]$

2. If 12 pens cost 180 taka, how much money will be needed to buy 25 pens? (Write the mathematical sentence and solve it.)

3. Raju's father plucked 25 green coconuts from their coconut tree and sold them at the rate of 60 taka each. He spent half of the money on buying fodder for his cows; and bought vegetables worth 150 taka from the remaining money. Now how much money is still left with him? (Write the mathematical sentence and solve it.)

4. If the price of 8 kg of flour is 384 taka, how many kilograms of flour can be bought for 4320 taka?

Let us do

1 Put a tick mark (√) on the correct answer.

(1) $(12 - 7) \times 2 - 2 = ?$

a) 10 b) 8 c) 5 d) 0

(2) How many notes of 50 taka make 2000 taka?

a) 200 b) 100 c) 50 d) 40

(3) Jamil bought 4 pens for 32 taka. How much money will he need to buy 15 pens?

a) 51 taka b) 60 taka c) 120 taka d) 128 taka

(4) The price of 1 dozen pencils is 48 taka, what is the price of 8 pencils?

a) 384 taka b) 56 taka c) 40 taka d) 32 taka

(5) 364 mangoes are equally distributed among 15 people, how many mangoes will remain?

a) 4 b) 15 c) 22 d) 34

(6) The mother's age is 3 times the daughter's age. The daughter is 15 years old. What will be the mother's age after 10 years?

a) 25 years b) 45 years c) 55 years d) 75 years

(7) Which of the following symbols will be put in the blank of the mathematical sentence $5 \times 6 \div 2 \square 6 \times 6 - 6$?

a) $<$ b) $>$ c) $=$ d) $\leq$

(8) Which of the following is an example of an open sentence?

a) $6 \times 4 = 24$ b) $A \times 4 = 16$ c) $8 \div 2 = 4$ d) $4 \times 4 = 16$

2 The total price of A number of tennis balls and 4 cricket bats is B taka. The price of one tennis ball is 26 taka, and the price of one cricket bat is 180 taka.

(1) Write a mathematical sentence to show the relationship between A and B.

(2) Find the value of B when A is 8.

(3) Find the value of A when B is 1032.

3 Let us calculate.

(1) $7 \times [\, 6 + \{24 - (9 + 2 - 1)\}]$

(2) $18 \div [\, 1 + 4 \div \{\, 1 + 5 \div (1 + 8 \div 2)\}]$

(3) $111 - [8 \div \{23 - (16 + 4 - 5\,)\}]$

4 Let us present the following mathematical sentences as individual stories.

(1) $(32+17) \div 9$ (2) $800 - (125 \times 5 + 18 \times 6)$

5 The price of 12 bananas and 8 papayas together is 616 taka. If the price of 1 banana is 8 taka, what will be the price of 1 papaya?

6 The price of 4 cows and 8 goats together is 625800 taka. The price of 1 goat is 17600 taka. What is the price of 1 cow?

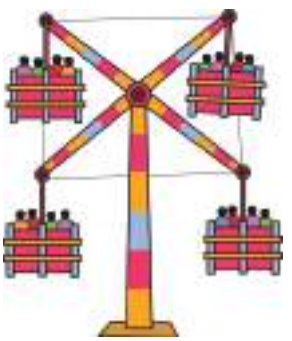
7 Keya and Maruf together spend 70500 taka per month on their household expenses. Maruf's monthly expenses are 6,000 taka more than Keya's. What are the respective monthly family expenditures of Keya and Maruf?

8 Rony and Basir together have 780 lychees. Basir has 64 more lychees than Rony. How many lychees does each of them have?

9 Mr. Saif bought 25 kg of rice, mustard oil costing 350 taka and spices costing 668 taka. The price of rice per kg was 72 taka. He gave the shopkeeper 3000 taka. How much money did the shopkeeper return to him?

10 At a fruit shop, 1 pineapple is sold at 48 taka, 1 pomegranate at 95 taka and 1 custard apple at 75 taka. If Sonia buys 4 pineapples, 2 pomegranates and 5 custard apples and gives 1000 taka to the shopkeeper, how much money will she get in return from the shopkeeper?

11 Three siblings namely Arefin, Sultan and Shikha along with their father went to a fair and had carousel ride. For a ride on the carousel, a person has to pay 15 taka each time. Arefin had the ride 5 times, Sultan 7 times and Shikha 1 time. Father gave 500 taka to the counter. How much will he get in return?



12 The sum of the ages of a mother and her son is 45 years. The mother's age is 4 times the son's age. How old are the mother and the son?

13 A worker earns 3125 taka in 5 days. How much money does he earn in 3 weeks?

14 Shariful bought 3 notebooks for 72 taka. How much money would he need to buy 12 notebooks?

15 16 labourers build a wall in 7 days.

a) How many days will it take for 4 labourers to build the wall?

b) How many additional workers are needed to build the wall in 2 days?

Chapter 3

Multiples and Factors

Multiples

Lira has brought many litchis from her grandfather's house. She wants to give 4 litchis to each of her friends. How many litchis will she take from home?





If the number of her friends is 3, then 12, if 4, then 16, if 5, then 20 litchis will be required.

Complete the table below and discuss how many litchis Lira requires.

Number of friends	1	2	3	4	5	6	10	20
Number of litchis	4	8	12	16	20	24	40	80

If Lira gives 4 litchis to each of her friends, she requires 4, 8, 12, 16, 20, ... number of litchis.

The numbers 4, 8, 12, 16, 20, 24, ... are multiples of 4. That is, if you multiply a whole number by 4, the numbers obtained are multiples of 4.

The multiple of a number is the product of that number and any whole number.

If Lira gave 3 litchis to each of her friends, how many litchis would she need?





Let us see in the table.

Number of friends	1	2	3	4	5	6	7	8	10
Number of litchis	3	6	9	12	15	18	21	24	30

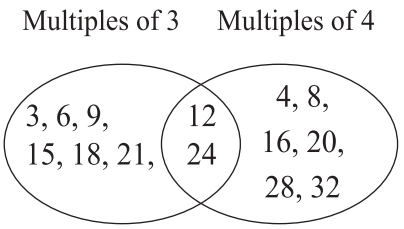
If 3 litchis are given, she has to give 3, 6, 9, 12, 15, 18, 21, ... number of litchis.

The numbers 3, 6, 9, 12, 15, 18, 21, 24, ... are multiples of 3.

1 Find 10 multiples of 5, 7, 8 and 9.

1 Let us carefully observe the rows of multiples of 3 and 4 below and mark the common multiples with circle ◯.

Multiples of 3 are 3, 6, 9, 12, 15, 18, 21, 24, ...
Multiples of 4 are 4, 8, 12, 16, 20, 24, 28, 32, ...
The common multiples of 3 and 4 are ☐, ☐





Numbers which are multiples of both 3 and 4 are called common multiples of 3 and 4.



Common multiples of 3 and 4 are 12, 24, 36, ...

2 numbers may have many common multiples.



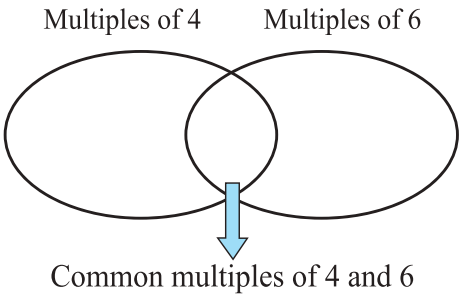
2 Let us identify the common multiples of 4 and 6 with ⬭ from the two rows below and find the common multiples.

Multiples of 4

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

Multiples of 6

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



2 Find two common multiples of 2 and 5.

3 If 3 or 5 friends come to Mili's house, at least how many chocolates should she buy so that she can distribute them equally?

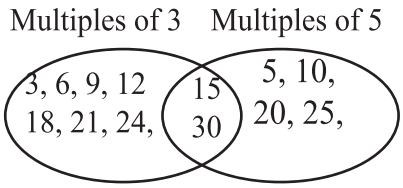




We need to find the multiples of 3 and 5.

Multiples of 3 are 3, 6, 9, 12, ..., ...,
Multiples of 5 are 5, 10, 15, 20, ..., ...,
Common multiples of 3 and 5 are ..., ...,

The least common multiple of 3 and 5 is ....
LCM of 3 and 5 is ...
That is, if Mili buys at least ..... chocolates, she can distribute equally among her 3 or 5 friends.



The common multiples of 3 and 5.



It is called Least Common Multiple or LCM in short.

The smallest (least) number among the common multiples of two or more numbers is called the Least Common Multiple or LCM.

3 Write 10 multiples of 3 and 4.

Multiples of 3										
Multiples of 4										

(a) Find 3 common multiples of 3 and 4.
(b) Find the LCM of 3 and 4.

4 Find the LCM.
(1) 8 and 12 (2) 9 and 12 (3) 12 and 14 (4) 7 and 6 (5) 15 and 20

4 By using two numbers 8 and 6, make a story about finding the LCM.



My story is that Rafi wants to give to his 8 classmates and 6 family members sweets on the occasion of his birthday. At least how many sweets should Rafi buy to divide equally among everyone? Now tell your story.

Your story is very good. My story is ...



5 Let us see how to find the LCM of 6, 8, and 12?



We have learned to find the LCM of two numbers. Then how will we find the LCM of three numbers?

I think, at first we will find the multiples of three numbers and then find the common multiple.



Let us see how to find the LCM of three numbers

Multiple of 6	6	12	18	24	30	36	42	48	
Multiple of 8	8	16	24	32	40	48	56	64	
Multiple of 12	12	24	36	48	60	72	84	96	

Common multiples of 6, 8, and 12 are ☐, ☐, ...

The least common multiple or LCM of 6, 8, and 12 are ☐

5 Find the LCM.

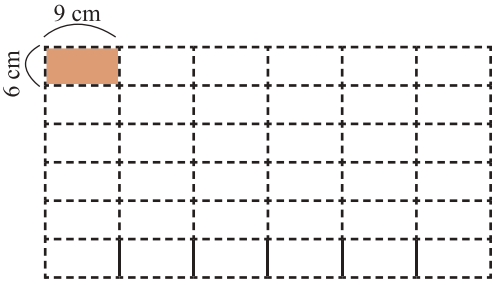
(a) 2, 3, 4 (b) 4, 5, 6 (c) 4, 6, 8 (d) 8, 12, 16

6 Reza bought tiles with 9 cm in length and 6 cm in width to lay on the floor of his room. The tiles are placed on the floor to form a square area.

(a) What is the length of the smallest square?

(b) How many tiles are needed to make the smallest square area?

(c) How many tiles are needed to make the second smallest square area?



Calculate how the length and the width change when the tiles are placed.

Number of tiles	1	2	3	4	5	6	7	8
Length (cm)	9	(18)	27	(36)	45	54	63	72
Width (cm)	6	12	(18)	24	30	(36)	42	48

6 There are two bells. One of them rings every 5 minutes and the other rings every 7 minutes. If they ring together at 10 am, at what time will they ring together again?



2026

How can a number be expressed as a product of prime factors?



We have already learnt about prime and composite numbers in grade 4.

Sajib picked the following number of mangoes separately from the mango trees of their garden.

4	7	12	21	36	37	43	49	57	59	63

Fill in the table below by using the number of mangoes.

The number of mangoes that have 2 factors	The number of mangoes that have more than 2 factors

Find out which of the numbers are prime and which are composite.



7, ..., ..., ..., numbers have ☐ factors so they are prime numbers.

Among the number of mangoes, all remaining numbers except prime numbers will be ☐ which are equal to the product of more than one prime number.

For example

$4 = 2 \times 2$	$12 = 2 \times 6$ $= 2 \times 2 \times 3$	$36 = 2 \times 18$ $= 2 \times 2 \times 9$ $= 2 \times 2 \times 3 \times 3$	$49 = 7 \times 7$

This method is called prime factorisation. Each of its factors is called a prime factor.

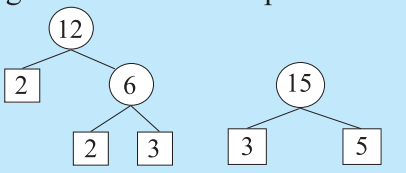
1 Express the following numbers as products of prime numbers.

(1) 18 (2) 27 (3) 32 (4) 56

Two buses bound for Mymensingh and Bogura departed together from Mahakhali bus terminal at 8 am. Mymensingh and Bogura bound buses leave after every 12 minutes and 15 minutes respectively. After what minimum time will the bus of the two companies leave together again?



We can apply the techniques learnt in grade 4 to solve the problem.



$12 = 2 \times 2 \times 3$ $15 = 3 \times 5$



The common factor of 12 and 15 is 3

The other factors of 12 and 15 are 2, 2, and 5

The least common multiples of 12 and 15 are $3 \times 2 \times 2 \times 5 = 60$

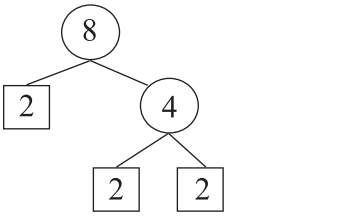
After 60 minutes or 1 hour, the two buses will leave together again.

That is, after leaving at 8 o'clock, both buses will leave again together at (8+1) = 9 o'clock.

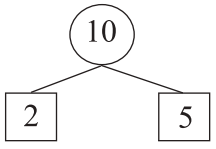
All of these factors are prime numbers.



1 Find the LCM of 8 and 10 with the help of prime factors.



8 = ☐ × ☐ × ☐



10 = ☐ × ☐

The common factors of 8 and 10 are ☐

Other factors of 8 and 10 are ☐ , ☐ , ☐

So the LCM of 8 and 10 are ☐ × ☐ × ☐ × ☐ = ☐

By finding the prime factors in this way and then multiplying the common and other factors, the LCM can be determined very easily.



Which numbers are divisible by 3?



In grade 4, we have learnt how to find divisibility by 2, 5, and 10. Now let us learn to find divisibility by 3.

We have learnt to find multiples and factors. Why do we need to learn divisibility?



By using the concept of divisibility, we can easily find the factors of any number. It also helps us understand the multiples of a number and determine which numbers are multiples of a given number.



That is, all multiples of 3 are divisible by 3. Numbers divisible by 3 are 3, 6, 9, 12, 15, 18, 21, 24 .....

In case of large numbers, how do we know whether the number is divisible by 3?



	Divisible by 3	Sum of the digits	Divisible by 3
65 ÷ 3 = 21 remainder 2	No	6+5 = 11	No
120 ÷ 3 = 40 remainder 0		1+2+0 = 3	
432 ÷ 3 = 144 remainder 0		4+3+2 = 9	

If the sum of the digits of any number is divisible by 3, then the number itself is divisible by 3.



1 Let us learn the divisibility by 3 in a different way.

$$
\begin{array}{r|l}
3 & \begin{array}{llllll} 1 & \square & 6 & 3 & \square & \\ 4 & 3 & 9 & 0 & 5 & \\ 3 & & & & & \\ \hline 1 & 3 & & & & \\ 1 & 2 & & & & \\ \hline & \square & 9 & & & \\ & 1 & 8 & & & \\ \hline & & 1 & 0 & & \\ & & & \square & & \\ \hline & & & 1 & 5 & \\ & & & 1 & 5 & \\ \hline & & & & 0 & \end{array}
\end{array}
$$

4 ~~3~~ ~~9~~ 0 5

Here we see that the digits of the number are 4, 3, 9, 0, and 5. First, we exclude the digits that are divisible by 3. Then we add the remaining digits. The sum is 9. Since 9 is divisible by 3, the given number is also divisible by 3.



1 Find out the number divisible by 4.



Numbers divisible by 4 are 4, 8, 12, 16, 20, 24, 28, ...

If the number is of 3 or more digits, then how do we know whether it is divisible by 4?



125 ÷ 4 = 31 Remainder 1 by 4 is not divisible

312 ÷ 4 = 78 Remainder ☐ by 4 ☐

464 ÷ 4 = ☐ Remainder ☐ by 4 ☐

506 ÷ 4 = 126 Remainder ☐ by 4 ☐

600 ÷ 4 = ☐ Remainder ☐ by 4 ☐

It is seen that all numbers that are formed with digits in ones and tens places are divisible by 4, that numbers are divisible by 4.





If the number is large that is having 4 or 5 digits, then how do we find divisibility?

```
        1  3  4  8  5
    ┌──────────────────
4 ) 5  3  9  4  0
    4
    ──────────────────
    1  3
    1  2
    ──────────────────
       1  9
       1  6
    ──────────────────
          3  4
          3  2
    ──────────────────
             2  0
             2  0
    ──────────────────
                0
```

```
        1  7  2  6
    ┌──────────────────
4 ) 6  9  0  5
    4
    ──────────────────
    2  9
    2  8
    ──────────────────
       1  0
          8
    ──────────────────
          2  5
          2  4
    ──────────────────
                1
```

All numbers formed by the digits in ones and tens place is 0 or divisible by 4, then the number is divisible by 4.

1 Carefully observe the following numbers and fill in the blank spaces below with them.
255, 3408, 5427, 6870, 9321, 53212, 684300, 923502, 879420, 1093200

Number divisible by 3	Number divisible by 4	Number divisible by both 3 and 4

2026

What is the smallest number divisible by 12 and 18?

1. Divide by the common prime factor.
2. Multiply the prime factors.

$2 \times 3 \times 2 \times 3 = 36$

2	12, 18
3	6, 9
	2, 3

It is easy. It has matched with my solution.

Multiples of 12 are 12, 24, 36, ...
Multiples of 18 are 18, 36, 72. ...



1 Let us find the least common multiples of 12, 14, 18.

2	12, 14, 18
3	6, 7, 9
	2, 7, 3

Least common multiples or LCM of 12, 14, 18 are

□ × □ × □ × □ × □ = □

Steps for finding LCM

(1) Divide the numbers by the common prime factor.
(2) If there is no prime factor that divides all the numbers, divide at least 2 numbers by a divisible prime factor.
(3) Write below the indivisible number all along.
(4) Multiply the factors.

1 Find the LCM.

1) 12, 15 (2) 24, 36 (3) 14, 18, 21 (4) 39, 45, 81

2 Let us find the least common multiple of 7 and 12.



How will we do? Here 7 is the prime number and 12 composite number.

Here the two numbers do not have a prime common factor.



If two numbers have no common prime factor, their LCM is the product of the numbers. So, the LCM of 7 and 12 is □ × □ = □

2 Make a story about LCM of three numbers 12, 16 and 20.

Factors

On the occasion of New Year, some guests have come to visit Mitu's house. She bought 12 sweets from the shop. Among how many guests can she divide the 12 sweets equally?





If distributed 1 to each, 12 sweets can be given to 12 people.

If distributed 2 to each, 12 sweets can be given to 6 people.



Complete the table below and see how many of her guests can Mitu give the sweets equally.

Number of guests	1	2	3	4	5	6	7	8	9	10	11	12
Number of sweets	12	6	4	3	×	2	×	×	×	×	×	1

If the guest is 1, he/she will get 12, if they are 2, they will get 6, if they are 3, they will get 4, if they are 4, they will get 3, if they are 6, they will get 2 and if they are 12, they will get 1 sweet.

Dividing 12 by 1, 2, 3, 4, 6, 12 leaves no remainder.
All numbers that divide 12 without remainder, are factors of 12.
The factors of 12 are 1, 2, 3, 4, 6 and 12
The factors of a number always include 1 and that number.

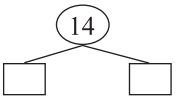
The factors of any number are those numbers by which dividing that number leave no remainder.

1 Let us mark the factors in the table below with ◯.

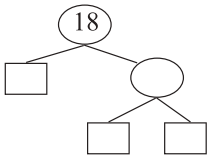
Factors of 8	1	2	3	4	5	6	7	8										
Factors of 9	1	2	3	4	5	6	7	8	9									
Factors of 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

1 Write the factors of the following numbers.

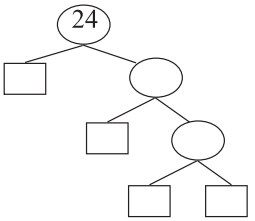
(1)



(2)



(3)



Highest Common Factor (HCF)

Some of Reza's classmates will visit his house during the summer vacation. There were 8 bananas and 12 litchis in their house. Among how many classmates will bananas and litchis be divided equally?





If the number of classmates is 2, then 4 bananas and 6 litchis will be given to each of them.

But among how many maximum classmates will 8 bananas and 12 litchis be divided equally?



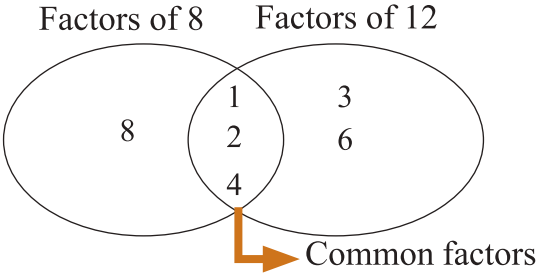
Find out such number in the table below that bananas and litchis are equally divided.

Number of classmates	1	2	3	4	5	6	7	8	9	10	11	12
Banana	8	4	×	2	×	×	×	1	×	×	×	×
Litchi	12	6	4	3	×	2	×	×	×	×	×	1

Factors of 8 are 1, 2, 4, 8
Factors of 12 are 1, 2, 3, 4, 6, 12

Factors of both 8 and 12 are 1, 2, 4





So 1, 2 and 4 are common factors of 8 and 12. Among the common factor 4 is the highest. So the highest common factor of 8 and 12 is 4.

The largest number among the common factors of two or more numbers is called the Highest Common Factor (HCF).

1 Find the HCF of 13 and 16.

Factors of 13 ☐, ☐
Factors of 16 ☐, ☐, ☐, ☐, ☐, ☐
Common factor of 13 and 16 ☐
HCF of 13 and 16 ☐

2 Find the HCF of 11 and 17.

Factors of 11 ☐, ☐
Factors of 17 ☐, ☐
Common factor of 11 and 17 ☐
HCF of 11 and 17 ☐



If the common factor of two or more numbers is 1, the HCF of the numbers is 1

The HCF of two or more prime numbers will be 1.



1 Find the HCF.

(1) 9, 11 (2) 17, 18 (3) 23, 24 (4) 31, 36

3 Identifying the factors of 18 with ◯ and the factors of 20 with ☐ from the following number line, find out the common factor and find the HCF.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Common factors of 18 and 20 ☐ HCF of 18 and 20 ☐

2 Find the HCF.

(1) 12 and 15 (2) 18 and 24 (3) 24 and 30 (4) 17 and 20

4 Taking the number 16 and 18, let us make a story of finding the HCF.

My story is, among how many maximum number of children will 16 notebooks and 18 pens be divided equally? Now tell your story.



2026

Sumi's father bought 15 liters of oil, 18 kg of flour and 24 kg of rice from the market to give to a few needy families. Among how maximum number of families will Sumi divide the products equally?



Earlier we have factorised 2 numbers. In this case, I think we need to find the factor of 3 numbers to find the numbers of family.

I think so too. First find the factor of 3 numbers and then find the common factor.



1 By writing the factors of 15, 18 and 24 in the following table, let us find out the common factors.

Factors of 15	1	3	5	15				
Factors of 18	1	2	3	6	9	18		
Factors of 24	1	2	3	4	6	8	12	24

Factors of 15 are 1, 3, 5,15
Factors of 18 are 1, 2, 3, 6, 9, 18
Factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24
Common factors of 15, 18 and 24 are 1, 3
The HCF of 15, 18 and 24 is ☐

Factors that are in all three will be common factors.



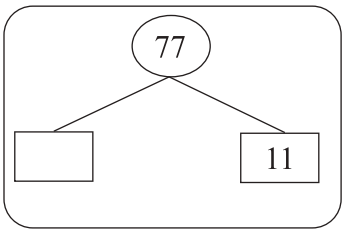


The largest factor among the common factors will be HCF

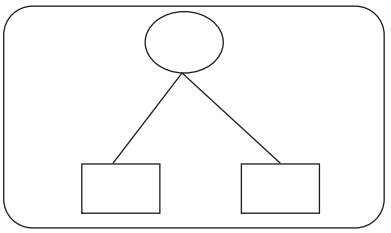
Sumi can distribute the products equally among a maximum of ☐ families.

3 Find the HCF of 16, 28 and 36.

From a red ribbon of 77 meter long and a black ribbon of 22 meter long pieces of the greatest possible equal length were cut without wasting any ribbon. What is the length of each piece?



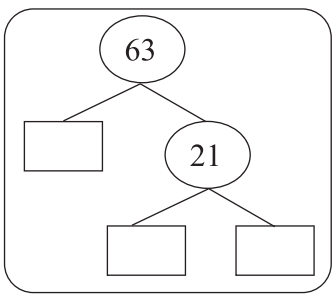
$77 = 7 \times 11$



$22 = 2 \times 11$

77 and 22 are divisible by the highest prime factor 11.
HCF of 77 and 22 is 11.
The length of the longest piece is 11 metres

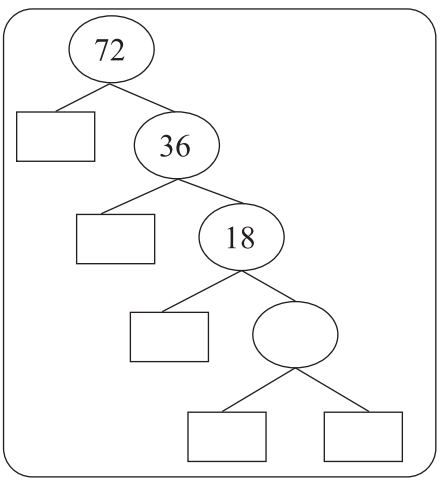
1 Find the HCF of 63 and 72 with the help of prime factors.



63 = □ × □ × □

72 = □ × □ × □ × □ × □

The HCF of 63 and 72 is □ × □ = □



The product of common prime factors is the HCF.



1 Find the HCF with the help of prime factor.

(1) 40 and 90 (2) 22 and 23 (3) 48 and 56

(4) 15, 25 and 40 (5) 12, 18 and 27 (6) 15, 25 and 45

2 Find the factors of 28, 42 and 56 with the help of prime factor.

2	28, 42, 56
7	14, 21, 28
	2, 3, 4

Product of common prime factors
$2 \times 7 = 14$
HCF of 28, 42, 56 is ☐

Verify

Factors of 28 are 1 2 4 7 14 28
Factors of 42 are 1 2 3 6 7 14 21 42
Factors of 56 are 1 2 4 7 8 14 28 56
Common factors of 28, 42 and 56 are ☐, ☐, ☐
HCF of 28, 42, 56 is ☐

Way of finding the HCF

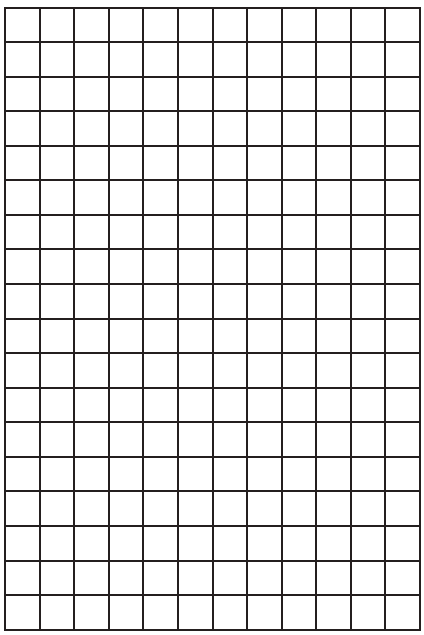
(1) Divide the numbers by the common prime factor.
(2) Stop dividing when all the numbers have no common factor.
(3) Multiply the common prime factors.

3 There is a graph paper of 12 cm in width and 18 cm in length.

(1) How many square pieces of different lengths can the graph paper be cut without leaving any remainder?
(2) What is the length of one side of the largest square pieces among the pieces?
(3) How many squares of the largest size can be made?



Let us think whether the graph paper can be divided into squares with sides of length 2 cm, 3 cm, 4 cm and so on.



2 A teacher wants to form maximum number of groups from 24 boys and 32 girls of grade 5 for solving math problems. How many such groups can be made so that each group has an equal number of boys and girls?

Let us try

1. Write down the multiples of 4, 7 and 10 in the table below.

2. Find the LCM.

9 and 12	8, 12 and 16

3. In the table below, write down among which of the numbers 18, 20, 21, 33, 36, 42, 48, 51, 68, 102, 112, 117 are divisible by 3, which are by 4 and which are by both 3 and 4.

divisible by 3	divisible by 4	divisible by both 3 and 4

4. Write down the factors of 18, 24 and 36 in the table below.

5. Find the HCF of 6, 8 and 12.

Let us do

1 Put a tick mark (√) on the correct answer.

(1) Which pair of the following numbers has LCM 30?

a) 3 and 5 b) 3 and 6 c) 5 and 6 d) 5 and 10

(2) Three buses stop every 3, 4 and 5 minutes respectively. After how many minutes will all three buses stop together again?

a) 12 minutes b) 15 minutes c) 20 minutes d) 60 minutes

(3) What is the highest common factor of 5 and 7?

a) 35 b) 12 c) 2 d) 1

(4) Among at most how many students 15 mangoes and 25 litchis can be divided equally?

a) 25 b) 15 c) 10 d) 5

2 Write the full form of LCM and HCF.

3 Check whether the following numbers are divisible by 3.

(1) 423 (2) 643 (3) 931 (4) 90312

4 Check whether the following numbers are divisible by 4.

(1) 732 (2) 908 (3) 1028 (4) 92500

5 What is the LCM of 7 and 13?

6 What is the HCF of 13 and 17?

7 Find the LCM

(1) 9, 15 (2) 24, 27 (3) 7, 15 (4) 6, 9, 12

(5) 8, 12, 16 (6) 7, 10, 12, 14 (7) 6, 8, 12, 16 (8) 9, 12, 15, 18

8 Find the HCF

(1) 9, 15 (2) 21, 30 (3) 32, 36 (4) 13, 14

(5) 12, 18, 24 (6) 12, 24, 36 (7) 26, 39, 52 (8) 8, 12, 16, 36

9 Which is the smallest number divisible by 9 and 12?

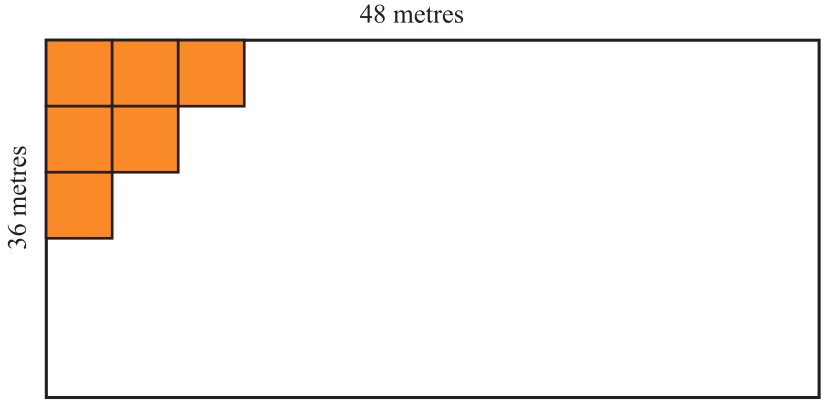
10 What is the minimum number of chocolates needed to be divided equally among 18 boys and 27 girls of grade 5?

11 What is the maximum number of students among whom 22 mangoes and 66 litchis will be divided equally?

12 There are trees at a distance of every 12 meters and lamp posts of every 20 meters along a road. If the tree and lamp post are side by side at the beginning of the road, after how many meters will the tree and the lamp post be side by side again?

13 After three bells ring together, they begin to ring at intervals of 15, 20, and 25 minutes respectively.
(1) After how many minutes will the bells ring together again?
(2) If the bells first ring together at 1:00 pm, at what time will they ring together again?

14 A rectangular floor is shown below. We want to cover the entire floor with square carpets without leaving any empty space.



(a). Determine the length of one side of the largest square carpet that can be placed on the floor.
(b). How many such carpets will be needed to cover the entire floor completely?

15 There are 42 mangoes and 105 litchis in a basket.
1. What is the maximum number of students among whom the mangoes and litchis can be divided equally?
2. How many mangoes and litchis will each student get?

Chapter 4

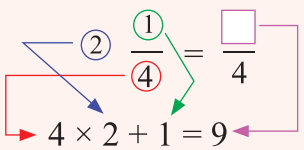
Common Fractions

How can we convert mixed fractions into improper fractions?





To convert a mixed fraction into an improper fraction, we multiply the denominator by the whole part and add the product to the numerator. We treat it as numerator. The denominator will remain the same.



We have learnt about Proper, Improper and Mixed fraction in class Four.

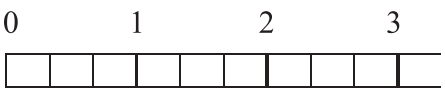


1 Let us convert mixed fractions into improper fractions.

(1) $1\frac{2}{3} = \frac{\square \times \square + \square}{\square} = \frac{\square}{\square}$ (2) $3\frac{3}{5} = \frac{\square \times \square + \square}{\square} = \frac{\square}{\square}$

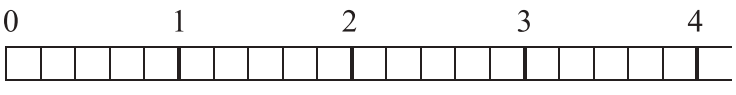
2 Let us colour and fill in the blanks.

(1) $1\frac{2}{3}$



$1\frac{2}{3} = \frac{\square}{\square}$

(2) $3\frac{3}{5}$



$3\frac{3}{5} = \frac{\square}{\square}$

1 Express in improper fractions.

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

How can we convert improper fractions into mixed fractions?





$\frac{9}{4} = \square\ \frac{\square}{\square}$

$9 \div 4 = 2$ remainder 1

Let's look at the numerator. Two 4's and 1 add up to 9

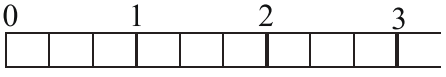


Conversion of improper fraction into mixed fraction

1. Divide the numerator by the denominator.
2. Write down the quotient of the whole part and remainder as a numerator.
3. The denominator will remain the same.

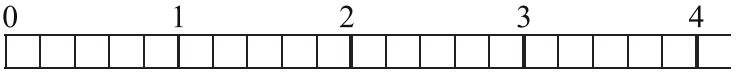
1 Colour and fill in the blanks.

(1) $\frac{7}{3}$



$\frac{7}{3} = \square\ \frac{\square}{\square}$

(2) $\frac{16}{5}$

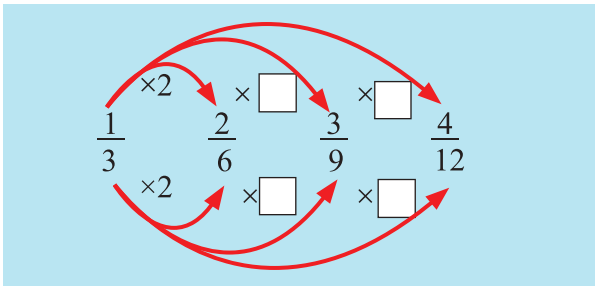


$\frac{16}{5} = \square\ \frac{\square}{\square}$

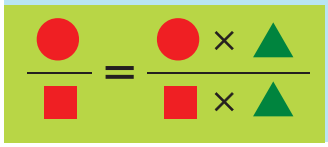
1 Express the improper fractions as mixed fractions.

(1) $\frac{7}{5}$ (2) $\frac{8}{4}$ (3) $\frac{22}{7}$ (4) $\frac{35}{8}$ (5) $\frac{40}{10}$

How can we make equivalent fractions of $\frac{1}{3}$?



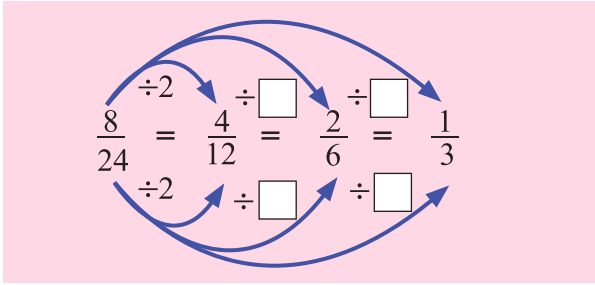
If we multiply the denominator and numerator of a fraction by the same number, we get the equivalent fraction of that fraction.



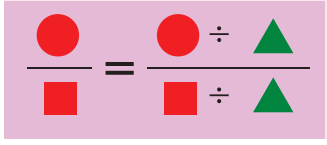


1 Write 4 equivalent fractions of $\frac{3}{8}$

1 Let us think about how to make $\frac{8}{24}$ equivalent to $\frac{4}{12}$, $\frac{2}{6}$ and $\frac{1}{3}$



Dividing the numerator and denominator of a fraction by the same number also gives an equivalent fraction.





2 Find the numbers in the blanks.

(1) $\frac{3}{7}=\frac{9}{\square}$ (2) $\frac{5}{9}=\frac{\square}{18}$ (3) $\frac{7}{21}=\frac{1}{\square}$ (4) $\frac{9}{36}=\frac{\square}{12}$

2 Let us express in the lowest form.



9 is the Highest Common Factor (HCF) of 9 and 36.

$$\frac{9}{36} \overset{\div 9}{=} \frac{1}{4} \rightarrow \frac{9}{36} = \frac{1}{4}$$

A fraction can be expressed in its lowest form by making it equivalent using the division process.



To convert a fraction into the lowest fraction, the numerator and denominator of the fraction are divided by the common factor.

3 Express $\frac{15}{45}$ into the lowest form.

$$\frac{15}{45} \overset{\div 3}{=} \frac{5}{15} \overset{\div 5}{=} \frac{1}{3}$$

$$\frac{\cancel{15}^{\,1}}{\cancel{45}_{\,3}} = \frac{1}{3}$$

$$\frac{\cancel{15}^{\,1}}{\cancel{45}_{\,3}} = \frac{1}{3}$$



First dividing by 3 and then by 5 is exactly same as dividing by 15. The HCF of 15 and 45 is 15.

Lowest form of fraction can easily be obtained after dividing both the numerator and denominator by the HCF.

3 Express the following fractions into the lowest form.

(1) $\frac{6}{12}$ (2) $\frac{14}{21}$ (3) $\frac{25}{30}$ (4) $\frac{16}{56}$ (5) $\frac{35}{42}$ (6) $\frac{20}{80}$

Rima has two ribbons. A ribbon is red with $\frac{2}{3}$ m in length. The other one is blue with $\frac{3}{4}$ m in length. Which one is larger?







Here the denominators are not equal. I could easily compare if the denominators were equal.

Let us use the concept of equivalent fractions.





Yes, then we can make these fractions with the same denominator or common denominator.

$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12}$$

$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12}$$

When the denominators are same, the fraction with larger numerator is larger.

Here $9 > 8$, so $\frac{9}{12} > \frac{8}{12}$



That is, $\frac{3}{4} > \frac{2}{3}$ then the blue ribbon is larger.



If the denominators of several fractions are not equal, we call them unequal denominator. To compare these, each fraction must be converted to a common denominator.

1 Compare the two fractions $\frac{3}{5}$ and $\frac{2}{3}$ by converting them into fractions with equal denominators.

$$\frac{3}{5} = \frac{6}{10} = \frac{9}{15} = \frac{12}{20} \rightarrow 5, 10, 15, 20...$$

$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12} = \frac{10}{15} \rightarrow 3, 6, 9, 12, 15...$$

$$\frac{3}{5} \rightarrow \frac{9}{15}$$

$$\frac{2}{3} \rightarrow \frac{10}{15}$$

Here $9 < 10$, so $\frac{9}{15} < \frac{10}{15}$ That is, $\frac{3}{5} < \frac{2}{3}$

2 Let us compare the following fractions by converting into equal denominators.

$\frac{1}{3}, \frac{1}{5}$	$\frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}$ $\frac{1}{5} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}$
$\frac{1}{3}, \frac{1}{5}$	→ $\frac{\square}{\square}$ $\square$ $\frac{\square}{\square}$ → $\frac{\square}{\square}$ $\square$ $\frac{\square}{\square}$

Here $\square$, $\square$ is the multiple of 3 and 5.
Again, the Least Common Multiple (LCM) of 3 and 5 is $\square$.

To find the common factor of the denominators, we usually use the least common multiple (LCM) of the denominators of the fraction.



3 Let us compare the fractions $\frac{5}{6}, \frac{1}{9}$ by converting them into fractions with equal denominators.

Here, the denominators of the fractions are 6 and 9. And LCM of 6 and 9 is 18.

$18 \div 6 = 3$, $\frac{5 \times 3}{6 \times 3} = \frac{\square}{\square}$ $\qquad$ $18 \div 9 = 2$, $\frac{1 \times 2}{9 \times 2} = \frac{\square}{\square}$

The two fractions with common denominators are $\frac{\square}{\square}$ and $\frac{\square}{\square}$.

Since, $\square > \square$, therefore, $\frac{\square}{\square} > \frac{\square}{\square}$

4 Let us compare the fractions $\frac{3}{8}, \frac{1}{24}$ by converting into fractions with equal denominators.

The denominators of the fractions are $\square$ and $\square$ and LCM $\square$

$\square \div 8 = \square$, $\frac{3 \times \square}{8 \times \square} = \frac{\square}{\square}$ $\qquad$ $\square \div 24 = \square$, $\frac{1 \times \square}{24 \times \square} = \frac{\square}{\square}$

Fractions with equal denominators $\frac{\square}{\square}$ and $\frac{\square}{\square}$.

Since $\square > \square$, therefore, $\frac{\square}{\square} > \frac{\square}{\square}$

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1 Let us compare the following fractions by converting these into fractions with equal denominators.

1) $\frac{3}{4}, \frac{3}{5}$ 2) $\frac{5}{7}, \frac{3}{4}$

2 Let us convert the following fractions into fractions with equal denominators and compare by using symbols.

1) $\frac{7}{9} \square \frac{5}{12}$ 2) $\frac{3}{4} \square \frac{5}{7}$ 3) $\frac{2}{3} \square \frac{6}{9}$ 4) $\frac{11}{16} \square \frac{17}{24}$

5 Let us convert the fractions $\frac{1}{3}$, $\frac{1}{5}$ and $\frac{5}{6}$ into fractions with equal denominators and compare by using '<', '>' or '='.

The LCM of denominators of the fractions $\square$, $\square$ and $\square$ is $\square$.

$\square \div \square = \square, \quad \frac{\square \times \square}{\square \times \square} = \frac{\square}{\square}$

$\square \div \square = \square, \quad \frac{\square \times \square}{\square \times \square} = \frac{\square}{\square}$

$\square \div \square = \square, \quad \frac{\square \times \square}{\square \times \square} = \frac{\square}{\square}$

Fractions with same denominator $\frac{\square}{\square}, \frac{\square}{\square}$ and $\frac{\square}{\square}$

Therefore, $\frac{\square}{\square} \square \frac{\square}{\square} \square \frac{\square}{\square}$

3 Let us convert into fractions with common denominator and compare by using '<', '>' or '='.

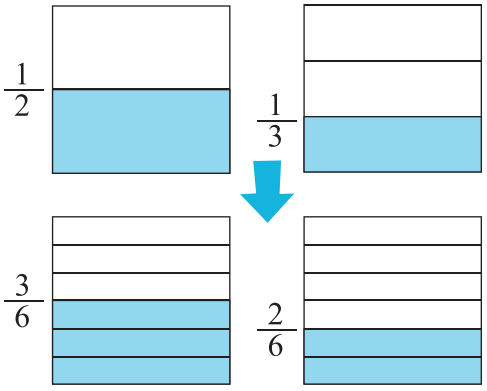
(1) $\frac{1}{3}, \frac{1}{4}, \frac{1}{6}$ (2) $\frac{3}{4}, \frac{9}{12}, \frac{15}{20}$ (3) $\frac{3}{5}, \frac{3}{4}, \frac{7}{10}$

There are $\frac{1}{2}$ Litres of water in bottle A and $\frac{1}{3}$ Litres of water in bottle B. How many litres of water are there in the two bottles?



To find out the total amount of water of two bottles we have to ☐





Mathematical sentence

$\frac{1}{2} + \frac{1}{3} = \square$

The calculation is as follows

$\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6}$

$= \frac{3+2}{6}$

$= \frac{5}{6}$ Litres

For adding fractions with different denominators, first we convert the fractions into the fraction with common denominator and then do the addition.





Wow! If we convert fractions into the fraction with common denominators, it not only allows us to compare fractions, but also to add the fractions.

1 Convert to a common denominator and add.

(1) $\frac{1}{4} + \frac{1}{3} = \frac{\square}{\square} + \frac{\square}{\square} = \frac{\square+\square}{\square} = \frac{\square}{\square}$

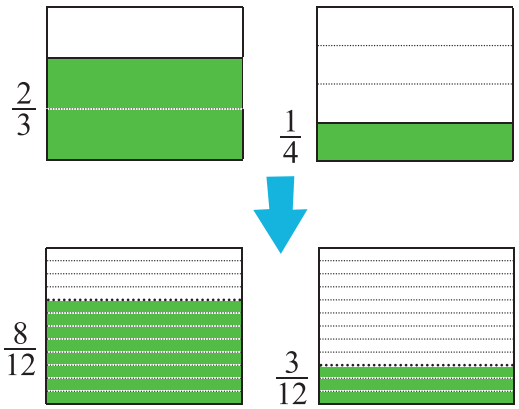
1 Do the additions.

(1) $\frac{1}{4} + \frac{2}{5}$ (2) $\frac{1}{6} + \frac{2}{9}$ (3) $\frac{1}{8} + \frac{5}{6}$

You have $\frac{2}{3}$ Litres of milk from which you drink $\frac{1}{4}$ Litres of milk. How many litres of milk remain?



This mathematical expression is about remaining.
So, here the process is: ☐



Mathematical sentence

$\frac{2}{3} - \frac{1}{4} = \square$

The calculation

$$\frac{2}{3} - \frac{1}{4} = \frac{8}{12} - \frac{3}{12}$$
$$= \frac{8-3}{12}$$
$$= \frac{5}{12} \text{ Litres}$$

For doing subtraction of fractions with different denominators, first we convert the fractions to fractions with common denominator and then calculate.



1 Convert to a common denominator and subtract.

(1) $\frac{1}{2} - \frac{1}{3} = \frac{\square}{\square} - \frac{\square}{\square} = \frac{\square - \square}{\square} = \frac{\square}{\square}$

(2) $\frac{1}{4} - \frac{1}{5} = \frac{\square}{\square} - \frac{\square}{\square} = \frac{\square - \square}{\square} = \frac{\square}{\square}$

(3) $\frac{2}{3} - \frac{2}{5} = \frac{\square}{\square} - \frac{\square}{\square} = \frac{\square - \square}{\square} = \frac{\square}{\square}$

1 Let us subtract.

(1) $\frac{3}{8} - \frac{1}{4}$ (2) $\frac{5}{6} - \frac{3}{8}$ (3) $\frac{7}{10} - \frac{4}{15}$

2 Let us calculate.

(1) $\frac{1}{3}+\frac{1}{6}$ → $\frac{1}{3}+\frac{1}{6}=\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square+\square}{\square}=\frac{\square}{\square}$

(2) $\frac{1}{2}-\frac{1}{6}$ → $\frac{1}{2}-\frac{1}{6}=\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square-\square}{\square}=\frac{\square}{\square}$

If possible, the fraction should be expressed to its lowest form.

2 Let us calculate.

(1) $\frac{1}{4}+\frac{3}{20}$ (2) $\frac{3}{8}+\frac{1}{24}$ (3) $\frac{4}{15}+\frac{1}{12}$ (4) $\frac{8}{15}+\frac{3}{10}$

(5) $\frac{11}{14}-\frac{2}{7}$ (6) $\frac{5}{6}-\frac{7}{18}$ (7) $\frac{11}{12}-\frac{4}{15}$ (8) $\frac{13}{15}-\frac{9}{20}$

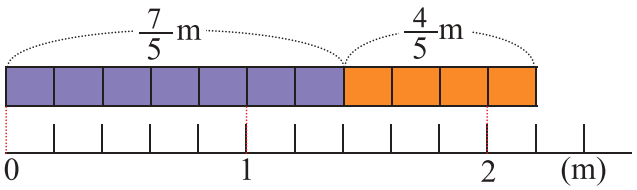
3 Calculate with three fractions.

(1) $\frac{1}{6}+\frac{1}{3}+\frac{1}{4}$ → $\frac{1}{6}+\frac{1}{3}+\frac{1}{4}=\frac{\square}{\square}+\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square+\square+\square}{\square}=\frac{\square}{\square}$

(2) $1-\frac{1}{2}-\frac{1}{4}$ → $1-\frac{1}{2}-\frac{1}{4}=\frac{\square}{\square}-\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square-\square-\square}{\square}=\frac{\square}{\square}$

4 How many metres are the length of $\frac{7}{5}$ m and $\frac{4}{5}$ m of two ribbons altogether?

Mathematical sentence ☐



Calculation, $\frac{7}{5}+\frac{4}{5}=\frac{\square+\square}{\square}=\frac{\square}{\square}=\square\frac{\square}{5}$ metres

3 Let us calculate.

(1) $\frac{6}{5}+\frac{8}{5}$ (2) $\frac{10}{7}+\frac{12}{7}$ (3) $\frac{9}{7}-\frac{6}{7}$ (4) $\frac{17}{8}-\frac{9}{8}$

How many meters are the two ribbons of length $1\frac{2}{5}$ m and $\frac{4}{5}$ m altogether?

Mathematical sentence

Rafi's calculation



Solve, taking $1+\frac{2}{5}$ for $1\frac{2}{5}$

$$1\frac{2}{5}+\frac{4}{5}=1+\frac{2}{5}+\frac{4}{5}$$
$$=1+\frac{\square}{5}$$
$$=1+1+\frac{1}{5}=\frac{1}{5}$$
$$=2\frac{1}{5}\text{ metres}$$

Tuli's calculation

I will convert mixed fractions to improper fractions and then add.



$$1\frac{2}{5}+\frac{4}{5}=\frac{\square}{5}+\frac{4}{5}$$
$$=\frac{\square}{5}$$
$$=\frac{11}{5}=2\frac{1}{5}\text{ metres}$$

So the total length of two ribbons is $2\frac{1}{5}$ metres.

1 Calculate.

1) $1\frac{2}{5}+\frac{1}{5}$ 2) $1\frac{2}{3}+\frac{2}{3}$ 3) $1\frac{4}{6}+\frac{3}{6}$ 4) $\frac{2}{9}+1\frac{7}{9}$

5) $1\frac{3}{5}-\frac{2}{5}$ 6) $1\frac{1}{3}-\frac{2}{3}$ 7) $1\frac{3}{7}-\frac{4}{7}$ 8) $2\frac{4}{9}-\frac{5}{9}$

1 Let us calculate and explain.

1) $2\frac{1}{3}+1\frac{1}{6}$ 2) $3\frac{2}{3}-1\frac{5}{12}$

1) $2\frac{1}{3}+1\frac{1}{6}=\frac{7}{3}+\frac{7}{6}$	mixed fraction ↓ improper fraction	2) $3\frac{2}{3}-1\frac{5}{12}=\frac{11}{3}-\frac{17}{12}$
$=\frac{\square}{\square}+\frac{\square}{\square}$	expression in equal denominator	$=\frac{\square}{\square}-\frac{\square}{\square}$
$=\frac{\square}{\square}$	calculation	$=\frac{\square}{\square}$
$=\frac{\square}{\square}$	expression in the lowest form	$=\frac{\square}{\square}$
$=\frac{\square}{\square}$	result	$=\frac{\square}{\square}$

2026

2 Think about how to calculate $1\frac{2}{3} + \frac{5}{8} - 1\frac{1}{6}$

1) $1\frac{2}{3} + \frac{5}{8} - 1\frac{1}{6} = \frac{\square}{\square} + \frac{\square}{\square} - \frac{\square}{\square}$	mixed fraction ↓ improper fraction
$= \frac{\square}{\square} + \frac{\square}{\square} - \frac{\square}{\square}$	expression in equal denominator
$= \frac{\square}{\square}$	calculation
$= \frac{\square}{\square}$	expression in the lowest form
$= \frac{\square}{\square}$	result

2 Calculate.

(1) $\frac{1}{3} + 1\frac{2}{9} + \frac{1}{6}$ (2) $2\frac{1}{2} - \frac{1}{6} - \frac{1}{9}$ (3) $1\frac{7}{8} - \frac{3}{8} + \frac{1}{10}$

3 Let us make a story for $\frac{2}{6} + \frac{1}{3} = ?$



My story is $\frac{2}{6}$ portion of a watermelon was eaten by my sister and $\frac{1}{3}$ portion by me. How many portions did the two of us eat?

My story is
.....
.....
.....



3 Make a story for $\frac{1}{6} - \frac{1}{9} = ?$

2026

Let us try

1. Find out which fractions are proper and which fractions are equal to 1 from the right cell.

(1) Proper fractions are (2) Fractions equal to 1 are	$\frac{2}{3}$, $\frac{4}{4}$, $\frac{5}{8}$, $\frac{8}{5}$, $\frac{3}{9}$, $\frac{13}{12}$ $\frac{27}{26}$, $\frac{1}{1}$, $\frac{76}{76}$, $\frac{42}{48}$, $\frac{2}{15}$, $\frac{3}{3}$

2. Express the number of boys and girls in a fraction of the total number of students in the classroom and express the result of the fractions in the lowest form.

3. Fill in the blanks.

(1) $\frac{3}{7} = \frac{\square}{28}$ (2) $\frac{3}{4} = \frac{\square}{36}$ (3) $\frac{3}{6} = \frac{\square}{2}$ (4) $\frac{12}{20} = \frac{\square}{5}$

4. Calculate.

(1) $\frac{4}{15} + \frac{2}{5}$ (2) $\frac{2}{3} - \frac{7}{15}$

Let us do

1 Put the tick mark (√) on the correct answer.

(1) Which one is the mixed form of the fraction $\frac{17}{5}$?

(a) $1\frac{7}{5}$ (b) $2\frac{2}{5}$ (c) $3\frac{2}{5}$ (d) $2\frac{3}{5}$

(2) Which one of the following fractions is the largest?

(a) $\frac{3}{4}$ (b) $\frac{3}{5}$ (c) $\frac{3}{7}$ (d) $\frac{3}{8}$

(3) Which one of the following fractions is the lowest form of $\frac{28}{56}$?

(a) $\frac{14}{28}$ (b) $\frac{7}{14}$ (c) $\frac{4}{8}$ (d) $\frac{1}{2}$

2 Calculate.

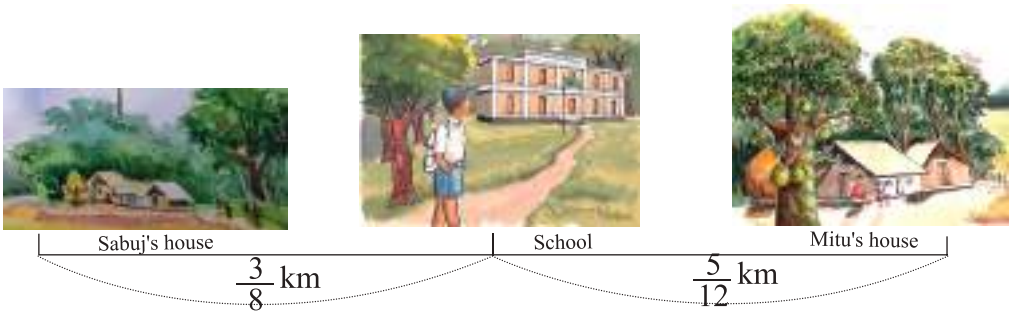
(1) $\frac{2}{9} + \frac{12}{5}$ (2) $3\frac{1}{3} + 2\frac{4}{9}$ (3) $\frac{2}{9} - \frac{12}{5}$

(4) $3\frac{1}{6} - 2\frac{1}{10}$ (5) $\frac{3}{4} + \frac{7}{8} - \frac{11}{12}$ (6) $1\frac{1}{3} + 3\frac{1}{4} - 2\frac{5}{6} - \frac{3}{4}$

3 How many metres are the two ribbons of length $3\frac{3}{4}$ m and $2\frac{1}{3}$ m altogether?

4 Geeta has $1\frac{5}{6}$ Litres and Mamun has $\frac{13}{8}$ Litres of juice. Who has more juice and how much more?

5 Sabuz's house is $\frac{3}{8}$ km west of the school. Mitu's house is $\frac{5}{12}$ km east of the school.



(a) How many km is the distance from Sabuz's house to Mitu's house?

(b) Whose house is nearer to the school? What is the difference of the distances of Sabuz's and Mitu's house from the school?

Chapter 5

Decimal Fractions

The length of a reading table is 1 metre and 30 centimetres. What is the length of the table in metre?

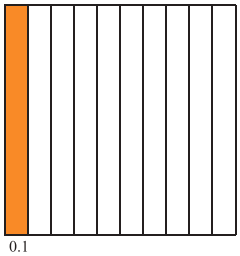


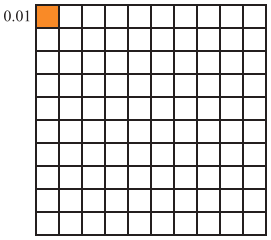
1 cm = $\frac{1}{100}$ metre
Then, 30 cm = $\frac{30}{100}$ metre



In grade 4, we have learnt $\frac{1}{10}$ = 0.1 or one tenths.

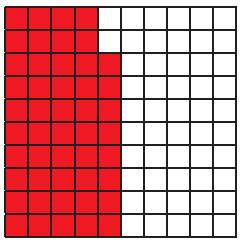


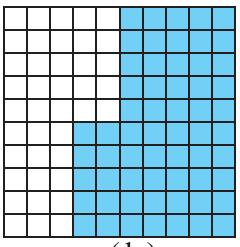




Then $\frac{1}{100}$ = 0.01 or one hundredths. Therefore, 30 cm = $\frac{30}{100}$ m = 0.3 m
The length of the table = 1 m + 0.3 m = 1.3 m.

1 Let us write the common fractions and decimal fractions of the coloured parts.


(a)


(b)

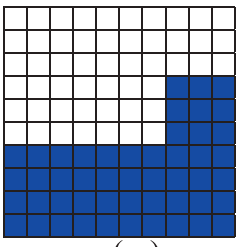
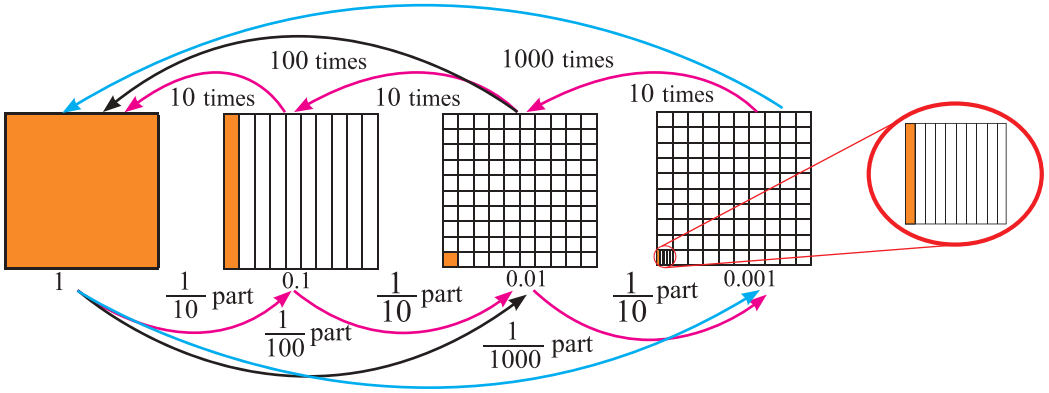

(c)

Figure	Coloured Part	Common Fraction	Decimal Fraction
a			
b			
c			

How can we express the coloured parts below?



(1) $\frac{1}{10}$ = one tenths = 0.1

(2) $\frac{1}{100}$ = ☐ = ☐

(3) $\frac{1}{1000}$ = ☐ = ☐

What are the names of the place values in the decimal fraction 1.235



Name of the Place	ones		tenths ($\frac{1}{10}$)	hundredths ($\frac{1}{100}$)	thousandths ($\frac{1}{1000}$)
	1	.	2	3	5
Rules of Reading	one	point	two	three	five

1 Mitu's father bought 250 grams of ginger, 100 grams of cumin, 500 grams of onion and 375 grams of garlic from the market. How many kilograms of items did he buy from the market?

He bought = 250 g + 100 g + 500 g + 375 g = 1225 g



1 gram = $\frac{1}{1000}$ kg

Therefore, $\frac{1}{1000}$ = 0.001 or one thousandths



Then, 1225 g = 1000 g + 225 g

$= \frac{1000}{1000}$ kg + $\frac{225}{1000}$ kg

= 1 kg + 0.225 kg = 1.225 kg.

He bought 1.225 kilograms of items.

2 How many 1, 0.1, 0.01 and 0.001 make up the following numbers?

(1) 1.469 (2) 3.825 (3) 0.017

Let us fill in the blanks		
(a) 1.469	(b) 3.825	(c) 0.017
1.469	3.825	0.017
One 1	☐ 1	☐ 1
Four 0.1	☐ 0.1	☐ 0.1
Six 0.01	☐ 0.01	☐ 0.01
Nine 0.001	☐ 0.001	☐ 0.001

1 Let us write the answers to following questions.

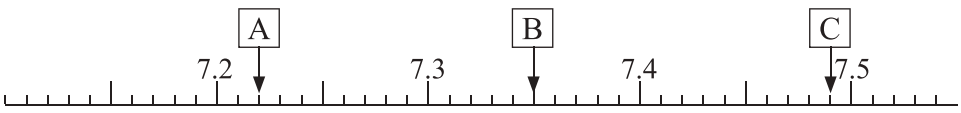
(1) What is the number formed by one hundred and fifty five 0.01s? ☐

2) What is the number formed by one hundred and fifty five 0.001s? ☐

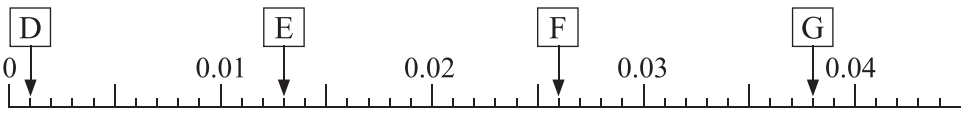
(3) How many 0.01s form 6.82? ☐

(4) How many 0.001s form 6.82? ☐

2 What numbers do the places from A to G on the number line represent? Let us write in the blanks.



A = ☐ B = ☐ C = ☐



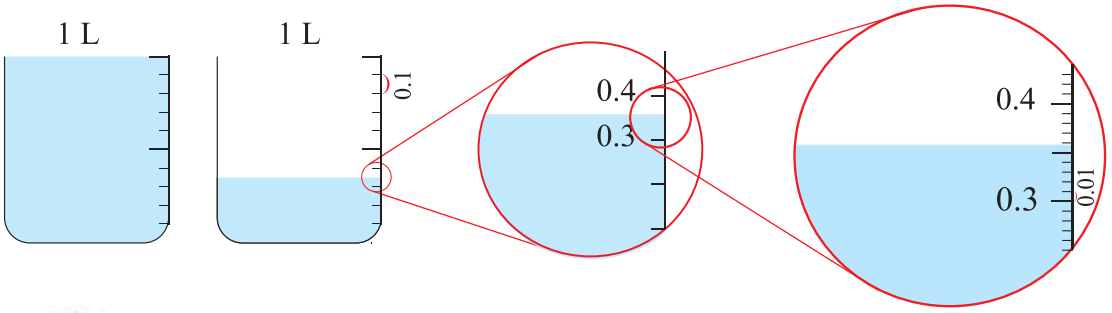
D = ☐ E = ☐ F = ☐ G = ☐

3 Let us put the following numbers on the number line.

0.001, 0.015, 0.027, 0.034,



1 How can we represent the amount of water shown in the following picture?





Let us divide 0.1 into 10 more equal parts.
$\frac{1}{10}$ of 1 Litre = 0.1 Litres (zero point one litres)

Therefore, $\frac{1}{10}$ of 0.1 Litres = 0.01 Litres (zero point zero one litre)
And, 0.01 Litres is $\frac{1}{100}$ portion of 1 Litre. Here, in the figure there are 6 units of 0.01 Litres .



Then, the amount of water shown in the picture

= ☐ Litre + $\frac{\square}{10}$ Litres + $\frac{\square}{100}$ Litres

= ☐ Litre + ☐ times of $\frac{1}{10}$ parts of 1 Litre + ☐ times of $\frac{1}{100}$ parts of 1 Litre

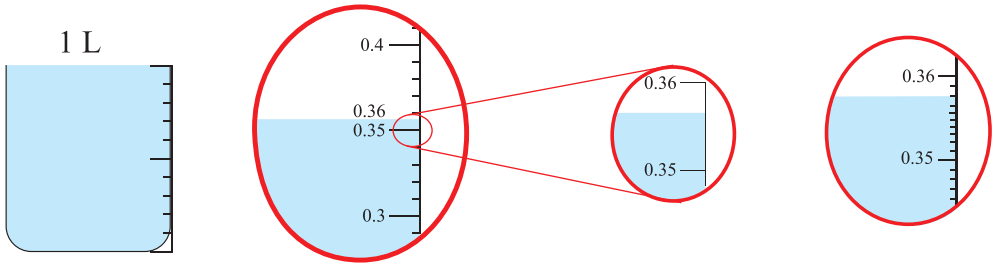
= ☐ Litre + ☐ times of 0.1 Litres + ☐ times of 0.01 Litres

= ☐ Litre + ☐ Litres + ☐ Litres

= (☐ + ☐ + ☐) Litres

= ☐.☐☐ Litres

1 How can we represent the amount of water shown in the picture?



One 1 Litre = ☐ ☐ ☐ ☐ ☐ Litre

Three 0.1 Litres = ☐ ☐ ☐ ☐ ☐ Litres

Five 0.01 Litres = ☐ ☐ ☐ ☐ ☐ Litres

Eight 0.001 Litres = ☐ ☐ ☐ ☐ ☐ Litres

One point three five eight litres = ☐ ☐ ☐ ☐ ☐ Litres



We can use the concept of tenths, hundredths and thousandths.

Name of the place	ones		tenths $\left(\frac{1}{10}\right)$	hundredths $\left(\frac{1}{100}\right)$	thousandths $\left(\frac{1}{1000}\right)$
	1	.	3	5	8
Rules of reading	one	point	three	five	eight

1 Let us write and read 0.849 in the place value chart.

Name of the place	ones		tenths $\left(\frac{1}{10}\right)$	hundredths $\left(\frac{1}{100}\right)$	thousandths $\left(\frac{1}{1000}\right)$
Rules of reading					

Conversion to Common Fractions

How can we convert decimal fractions into common fractions?



We can use the concept of tenths, hundredths and thousandths



Let us express 0.3, 0.15 and 0.008 into common fractions.

$$0.3 = \frac{\square}{10}$$

$$0.15 = \frac{\square}{100}$$

$$0.008 = \frac{\square}{1000}$$



We know,

$$0.1 = \frac{1}{10}$$

$$0.01 = \frac{1}{100}$$

$$0.001 = \frac{1}{1000}$$

Let us express decimal fractions into common fractions by putting 10, 100 and 1000 as the denominators.



Let us express the following decimal numbers into common fractions and if possible, represent the fractions in lowest form.

$$0.15 = \frac{\overset{3}{\cancel{15}}}{\underset{20}{\cancel{100}}} = \frac{3}{20}$$

$$0.008 = \frac{\overset{1}{\cancel{8}}\,\overset{2}{\cancel{0}}}{\underset{1\,2\,5}{\cancel{1000}}} = \frac{1}{125}$$

1 Let us express the following decimal numbers into common fractions and if possible, represent the fractions in lowest form.

(1) 0.04 (2) 0.35 (3) 0.75 (4) 0.25

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Conversion to Decimal Fractions

How can we convert common fractions into decimal fractions?



Let us express $\frac{3}{10}$, $\frac{27}{100}$, $\frac{341}{1000}$ into decimal fractions.

$\frac{3}{10} = 0.3$ $\frac{27}{100} = 0.27$ $\frac{341}{1000} = 0.341$

Now, let us express $\frac{3}{5}$, $\frac{7}{25}$, $\frac{173}{500}$ into decimal fractions.



$$\frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{6}{10} = 0.6$$

$$\frac{7}{25} = \frac{7 \times 4}{25 \times 4} = \frac{28}{100} = 0.28$$

$$\frac{173}{500} = \frac{173 \times 2}{500 \times 2} = \frac{346}{1000} = 0.346$$

We can represent denominators as 10, 100 and 1000 etc. by using the concept of equivalent fractions. Then we can easily convert the common fractions into decimal fractions.



1 Let us convert the following fractions into decimal fractions.

(1) $\frac{7}{20} = \frac{7 \times \square}{20 \times \square} = \frac{\square}{\square} = \square$

(2) $\frac{11}{25} = \frac{11 \times \square}{25 \times \square} = \frac{\square}{\square} = \square$

(3) $\frac{37}{50} = \frac{37 \times \square}{50 \times \square} = \frac{\square}{\square} = \square$

(4) $\frac{1}{4} = \frac{1 \times \square}{4 \times \square} = \frac{\square}{\square} = \square$

How can we compare decimal fractions?



Let us compare 1.23, 0.015 and 0.478 to find out which one is larger and which one is smaller.

$1.23 = \frac{123}{100} = \frac{1230}{1000}$	$0.015 = \frac{15}{1000}$	$0.478 = \frac{478}{1000}$

As $\frac{15}{1000} < \frac{478}{1000} < \frac{1230}{1000}$ Therefore, $0.015 < 0.478 < 1.23$

We can compare decimal numbers more easily by using the concept of place value. At first, I write the numbers directly in the table like this one below.



Name of the place					number
ones (1)	decimal point	tenths (0.1)	hundredths (0.01)	thousandths (0.001)	
1	(.)	2	3	0	1.230
0	(.)	0	1	5	0.015
0	(.)	4	7	8	0.478



Now, let us read only the numbers without decimal points.

Name of the place				number
ones (1)	tenths (0.1)	hundredths (0.01)	thousandths (0.001)	
1	2	3	0	1230
0	0	1	5	0015
0	4	7	8	0478



I got these three numbers: 1230, 0015 and 0478 that is 1230, 15 and 478.

Since $15 < 478 < 1230$ therefore, $0.015 < 0.478 < 1.23$





In this way we can compare decimal fractions too.

1 Let us compare 4.044, 4.44, 4.6 and 0.489 by using the chart of place value and arrange them in order from the smallest to the largest by using the relation symbols (<, >).

Name of the place					number
ones (1)	decimal point	tenths (0.1)	hundredths (0.01)	thousandths (0.001)	
	(.)				
	(.)				
	(.)				

Without using a decimal point,

Name of the place				number
ones (1)	tenths (0.1)	hundredths (0.01)	thousandths (0.001)	

Since, ☐ < ☐ < ☐ < ☐

Therefore, ☐ < ☐ < ☐ < ☐

Addition and Subtraction of Decimal Numbers

Tasin travelled 25.52 kilometres by bus and 12.65 kilometres by boat. How many kilometres did he travel in total?



25.52 kilometre



12.65 kilometre

Mathematical sentence



We learnt in class four, how to add and subtract two decimal numbers to tenths. We can calculate by placing the numbers vertically.

$$\begin{array}{r} 25.52 \\ +\ 12.65 \\ \hline 38.17 \end{array}$$

He travelled 38.17 km in total.

However, it is very important to keep the decimal points of the numbers in the same vertical places correctly.



The rules of vertical calculation

1. Arrange the numbers in such a way that the decimal points are aligned vertically.
2. Calculate in the same way as we do regarding the addition and subtraction of the whole numbers. We will place a decimal point in the answer.

1 The weight of Hasan's bag is 4.8 kilograms and the weight of Ripa's bag is 3.59 kilograms. What is the difference between the weight of their bags?





Calculation

$$\begin{array}{r} 4.80 \\ -\ 3.59 \\ \hline 1.21 \end{array}$$

Let us arrange the numbers in order and write 4.80 instead of 4.8



The difference between the weights of the two bags is 1.21 kilograms.

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Let us do addition and subtraction of decimal fractions up to the places of hundredths and thousandths.



Let us note something when adding and subtracting decimal fractions.

(1) 4.06 + 2.94

✓
$$\begin{array}{r} 4.06 \\ +\ 2.94 \\ \hline 7.00 \end{array}$$

4.06 + 2.94 = 7.00,
But we only write 7
4.06 + 2.94 = 7

(2) 4 − 2.31

×
$$\begin{array}{r} 4 \\ -\ 2.31 \\ \hline 2.33 \end{array}$$

✓
$$\begin{array}{r} 4.00 \\ -\ 2.31 \\ \hline 1.69 \end{array}$$

We write 4.00 instead of 4

(3) 3.75 − 0.5

$$\begin{array}{r} 3.75 \\ -\ 0.5 \\ \hline \times\ 3.70 \end{array}$$

$$\begin{array}{r} 3.75 \\ -\ 0.50 \\ \hline \checkmark\ 3.25 \end{array}$$

We write 0.50 instead of 0.5

(4) 7.58 − 6.87

$$\begin{array}{r} 7.58 \\ -\ 6.87 \\ \hline \times\ 71 \end{array}$$

$$\begin{array}{r} 7.58 \\ -\ 6.87 \\ \hline \checkmark\ 0.71 \end{array}$$

Let us not forget to place decimal point and '0' in ones' place.



We can add and subtract fractions with thousandths places in the same way.

2.15 + 3.412

$$\begin{array}{r} \square \\ +\ \square \\ \hline \square \end{array}$$

8.592 − 4.37

$$\begin{array}{r} \square \\ -\ \square \\ \hline \square \end{array}$$

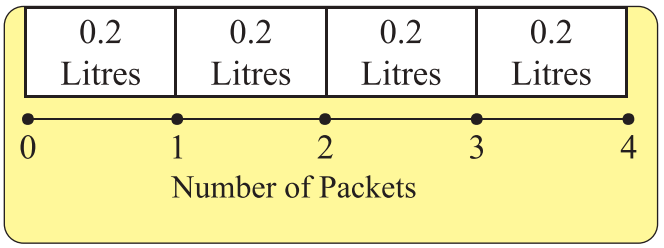
1 Let us do vertical calculation.

(1) $\begin{array}{r} 0.28 \\ +\ 6.72 \\ \hline \end{array}$ (2) $\begin{array}{r} 3.141 \\ +\ 5.379 \\ \hline \end{array}$ (3) $\begin{array}{r} 4. \\ -\ 2.25 \\ \hline \end{array}$ (4) $\begin{array}{r} 7.652 \\ -\ 6.648 \\ \hline \end{array}$

Multiplication of Decimals

Each of 4 milk packets contains 0.2 Litres of milk. What will be the total amount of milk in all the packets ?

Mathematical sentence





0.2 → 2 units of 0.1
0.2 × 4 → (2 x 4) units of 0.1
0.2 × 4 → 8 units of 0.1 → 0.8

0.2 × 4 =

Milk : Litre

1 Multiply.

(1) 0.5 × 4 (2) 0.8 × 5 (3) 0.05 × 2 (4) 0.09 × 5

2 There are 5 cups. Each cup weighs 0.3 kg. What is the total weight of the 5 cups?

1 Let us explain the multiplication 0.004 × 7

0.004 is units of 0.001

0.004 × 7 is (×) units of 0.001

0.004 × 7 =

3 Multiply.

(1) 0.003 × 2 (2) 0.008 × 9 (3) 0.006 × 5

4 A motorbike travels 0.02 kilometres per second. How many kilometres does it travel in 8 seconds?

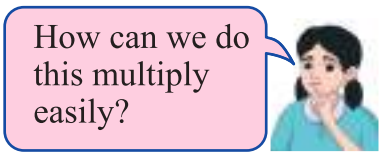
2 Let us explain the multiplication 2.13 × 6

2.13 × 6

2.13 is ☐ units of 0.01

2.13 × 6 is (☐ × ☐) units of 0.01

Thus, 2.13 × 6 = ☐



$$\begin{array}{r} 2.13 \\ \times\ \ 6 \\ \hline 12.78 \end{array}$$

$$\begin{array}{r} 2.13 \\ \times\ \ 6 \\ \hline 12.78 \end{array}$$

Rules for Multiplying Decimal Numbers

1. Let us multiply the numbers without thinking of the decimal point.
2. Let us put the decimal point in the product according to the total decimals in the numbers being multiplied.

5 Multiply.

(1) 3.4 × 7 (2) 6.7 × 8 (3) 7.6 × 4 (4) 8.5 × 9

(5) 1.23 × 8 (6) 3.52 × 9 (7) 4.18 × 3 (8) 5.26 × 4

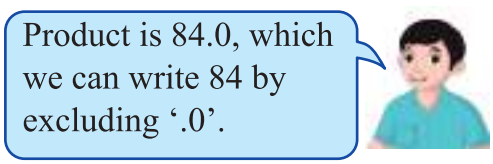
(9) 0.212 × 3 (10) 4.037 × 8 (11) 3.215 × 8 (12) 7.204 × 8

3 Let us multiply.

(1) 4.3 × 23 (2) 2.4 × 35

(1) $\begin{array}{r} 4.3 \\ \times\ 23 \\ \hline 129 \\ 86 \\ \hline 98.9 \end{array}$

(2) $\begin{array}{r} 2.4 \\ \times\ 35 \\ \hline 120 \\ 72 \\ \hline 84.0 \end{array}$



6 Multiply.

(1) 2.3 × 16 (2) 4.6 × 38 (3) 7.6 × 45

(4) 16.7 × 52 (5) 24.5 × 26 (6) 30.9 × 23

(7) 6.47 × 28 (8) 4.08 × 63 (9) 5.25 × 2

4 How can we multiply decimal numbers by 10 and 100?

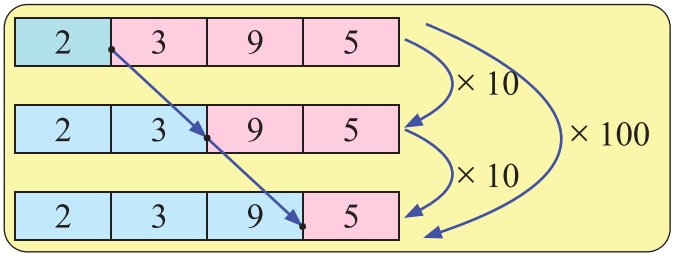
(a) 2.395 × 10 and (b) 2.395 × 100

(1)
$$\begin{array}{r} 2.395 \\ \times \quad 10 \\ \hline 0\,0\,0\,0 \\ 2\,3\,9\,5 \\ \hline 23.950 \end{array}$$

(2)
$$\begin{array}{r} 2.395 \\ \times \quad 100 \\ \hline 0\,0\,0\,0 \\ 0\,0\,0\,0 \\ 2\,3\,9\,5 \\ \hline 239.500 \end{array}$$

When we multiply a number by 10 and 100, the decimal point moves to the right as many places as there are '0s'.





5 Let us think and write how the place of decimal changes when we multiply 2.395 by 1000.

7 Multiply the following numbers by 10 and 1000

(1) 3.48 (2) 0.8 (3) 0.092

8 By which number will we multiply 4.209 to get the following numbers?

(1) 420.9 (2) 42.09

9 Let us multiply.

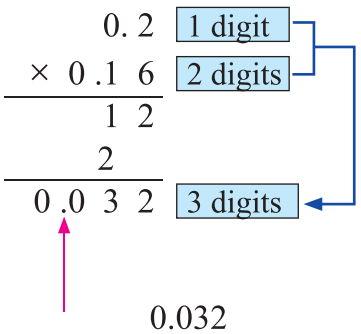
(1) 2.45 × 10 (2) 6.3 × 10 (3) 0.021 × 10

(4) 3.748 × 100 (5) 0.9 × 100 (6) 13.7 × 100

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6 Let us think about how the following calculations were done.

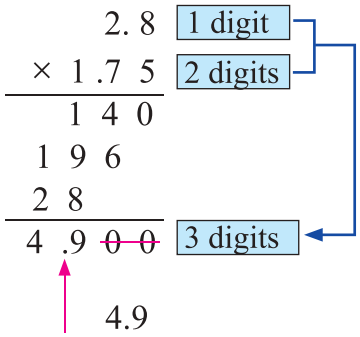
(a) 0.2×0.16



0.032

(There are 3 digits after the decimal point.)

(b) 2.8×1.75



4.9

(It is not necessary to write '0's to the right most places after the decimal point.)

10 Let us multiply.

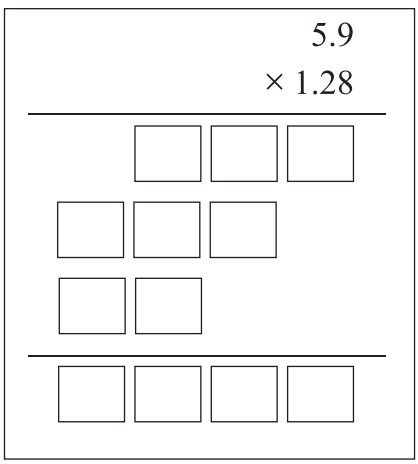
(1) 3.2×1.24 (2) 4.37×6.8 (3) 0.35×2.9

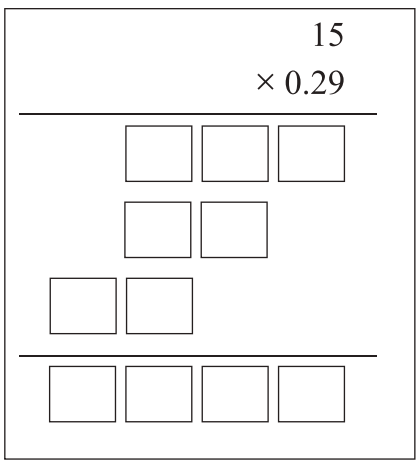
(4) 4.1×0.73 (5) 3.68×0.15 (6) 0.74×2.5

(7) 0.32×0.4 (8) 0.6×0.13 (9) 0.25×0.6

(10) 29×4.73 (11) 18×0.65 (12) 26×0.415

7 Let us do the following calculations and fill in the blanks.





Division of Decimal Numbers

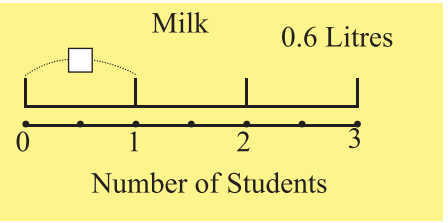
We want to divide 0.6 Litres of milk among 3 students equally. How many litres of milk will each student get?

Mathematical sentence ☐



0.6 → 6 units of 0.1
0.6 ÷ 3 → (6 ÷ 3) units of 0.1
0.6 ÷ 3 → 2 units of 0.1 → 0.2





0.6 ÷ 3 = ☐

Milk _____ Litre

1 Let us explain the three calculations below and fill in the blanks.

(1) 0.8 ÷ 4

0.8 is ☐ units of 0.1

0.8 ÷ 4 is (☐ ÷ ☐) units of 0.1

0.8 ÷ 4 = ☐

(2) 0.16 ÷ 2

0.16 is ☐ units of 0.01

0.16 ÷ 2 is (☐ ÷ ☐) units of 0.01

0.16 ÷ 2 = ☐

(3) 0.035 ÷ 7

0.035 is ☐ units of 0.001

0.035 ÷ 7 is (☐ ÷ ☐) units of 0.001

0.035 ÷ 7 = ☐

(4) 8.1 ÷ 3

8.1 is ☐ units of 0.1

8.1 ÷ 3 is (☐ ÷ ☐) units of 0.1

8.1 ÷ 3 = ☐

1 Let us divide.

(1) 1.6 ÷ 8 (2) 0.24 ÷ 8 (3) 0.021 ÷ 3 (4) 7.2 ÷ 9

2 5 students want to divide 4.5 metres of ribbon equally among themselves. How many metres of ribbon will each of them get?

3 A container has 0.63 Litres of oil. We pour the oil into 7 cups equally. How many litres of oil will be in each cup?

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If 2 Litres of fruit juice are divided among 5 students, how many litres of fruit juice will each student get?

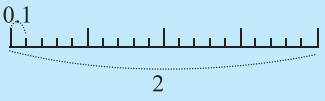
Mathematical sentence ☐

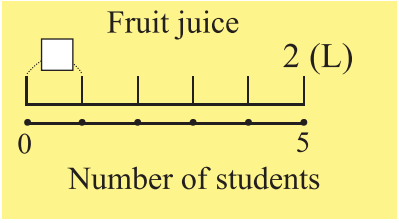


2 → 20 units of 0.1

2 ÷ 5 → (20 ÷ 5) units of 0.1

2 ÷ 5 → 4 units of 0.1 → 0.4





2 ÷ 5 = ☐

Fruit juice ☐ Litre

1 Let us explain the calculation and fill in the blanks.

3 ÷ 6

3 is ☐ units of 0.1

3 ÷ 6 is (☐ ÷ ☐) units of 0.1

3 ÷ 6 = ☐

1 Let us divide.

(1) 2 ÷ 4 (2) 3 ÷ 5 (3) 0.3 ÷ 5 (4) 0.4 ÷ 8

(5) 0.1 ÷ 2 (6) 0.03 ÷ 6 (7) 0.04 ÷ 5 (8) 0.02 ÷ 4

2 Let us explain the calculation 7.2 ÷ 3

7.2 is ☐ units of 0.1

7.2 ÷ 3 is (☐ ÷ ☐) units of 0.1

7.2 ÷ 3 = ☐



We can also do the division in another way.

$\begin{array}{r} 2 \\ 3\overline{)7.2} \\ 6 \end{array}$ → $\begin{array}{r} 2 \\ 3\overline{)7.2} \\ 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 2. \\ 3\overline{)7.2} \\ 6 \\ \hline 12 \end{array}$ → $\begin{array}{r} 2.4 \\ 3\overline{)7.2} \\ 6 \\ \hline 12 \\ 12 \\ \hline 0 \end{array}$
Let us divide like whole numbers	Let us observe the place of the decimal point in the dividend. Then place the decimal point in the quotient in the same position.

3 Let us think about how the calculation $4.92 \div 6$ has been done.

We cannot divide 4 by 6. So, let us write '0' in ones' place.

$\begin{array}{r} 0. \\ 6\overline{)4.92} \\ 0 \end{array}$ → $\begin{array}{r} 0.8 \\ 6\overline{)4.92} \\ 0 \\ \hline 49 \\ 48 \\ \hline 1 \end{array}$ → $\begin{array}{r} 0.82 \\ 6\overline{)4.92} \\ 0 \\ \hline 49 \\ 48 \\ \hline 12 \\ 12 \\ \hline 0 \end{array}$

Let us observe the place of dividend in which the decimal point is given. Then let us put the decimal point at the same place of the quotient as in the dividend.

4 Let us do the division $5 \div 8$

$\begin{array}{r} 0. \\ 8\overline{)5} \\ 0 \end{array}$ → $\begin{array}{r} 0.6 \\ 8\overline{)5.0} \\ 0 \\ \hline 50 \\ 48 \\ \hline 2 \end{array}$ → $\begin{array}{r} 0.62 \\ 8\overline{)5.00} \\ 0 \\ \hline 50 \\ 48 \\ \hline 20 \\ 16 \\ \hline 4 \end{array}$ → $\begin{array}{r} 0.625 \\ 8\overline{)5.000} \\ 0 \\ \hline 50 \\ 48 \\ \hline 20 \\ 16 \\ \hline 40 \\ 40 \\ \hline 0 \end{array}$



To continue the division, let us put '0' after decimal.

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2 Let us divide.

(1) $7\overline{)2.24}$ (2) $8\overline{)6.72}$ (3) $5\overline{)0.75}$ (4) $3\overline{)9.18}$

(5) $6\overline{)24.3}$ (6) $4\overline{)1}$ (7) $3\overline{)0.642}$ (8) $7\overline{)0.749}$

(9) $5\overline{)0.405}$ (10) $4\overline{)10.812}$ (11) $6\overline{)60.03}$ (12) $8\overline{)3}$

5 Let us explain how to do the calculation $98.7 \div 21$.

$$\begin{array}{r} 4. \\ 21\overline{)98.7} \\ 84 \end{array} \quad \Rightarrow \quad \begin{array}{r} 4.7 \\ 21\overline{)98.7} \\ 84 \downarrow \\ \hline 14\,7 \\ 14\,7 \\ \hline 0 \end{array}$$



It is not important how many digits are here. We can count them as whole numbers.



Let us observe the place of the dividend in which the decimal point is placed. Then let us place the decimal point at the same place of the quotient as in the dividend.

3 Let us divide.

(1) $23\overline{)59.8}$ (2) $38\overline{)64.6}$ (3) $12\overline{)4.8}$ (4) $43\overline{)9.46}$

(5) $36\overline{)2.88}$ (6) $24\overline{)2.16}$ (7) $12\overline{)16.2}$ (8) $25\overline{)32.1}$

(9) $25\overline{)26.5}$ (10) $72\overline{)1.8}$ (11) $32\overline{)24}$ (12) $16\overline{)10}$

4 If the total weight of 12 cups is 4.41 kg, what is the weight of each cup?

5 If 35.28 Litres of oil are equally divided among 18 families, how many litres of oil will each family get?

6 If the total length of 16 wires is 38.4 metres, what is the length of each wire?

How can we calculate the following two divisions?

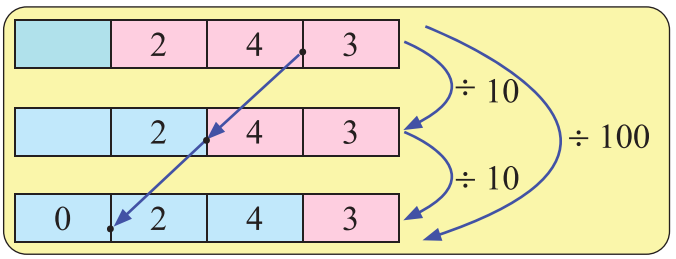
(a) $24.3 \div 10$ (b) $24.3 \div 100$

(a)
$$\begin{array}{r} 2.43 \\ 10\overline{)\,24.30} \\ 20 \\ \hline 43 \\ 40 \\ \hline 30 \\ 30 \\ \hline 0 \end{array}$$

(b)
$$\begin{array}{r} 0.243 \\ 100\overline{)\,24.300} \\ 200 \\ \hline 430 \\ 400 \\ \hline 300 \\ 300 \\ \hline 0 \end{array}$$

When dividing by 10 or 100, the decimal point in the quotient moves to the left as many places as there are 0s in the divisor.





1 Let us think and write how the place of the decimal changes when we divide 24.3 by 1000.

1 Let us divide the following numbers by 10 and 100

(1) 2.8 (2) 4 (3) 20.3

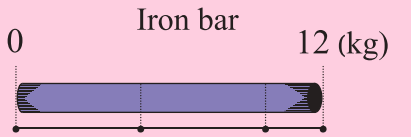
2 By which number will we divide 36.4 to get the following numbers?

(1) 3.64 (2) 0.364

A 2.4 metre long iron bar weighs 12 kg. What is the weight per metre of the iron bar ?



Weight per metre of the iron bar
= Total weight ÷ Length



Mathematical sentence

Rafi's idea

2.4 metres equal 24 units of 0.1 metre.

The weight of 0.1 metre of the iron bar is $\frac{1}{24}$ of 12 kg

→ $12 \div 24 = \frac{12}{24} = 0.5$ (kg)

The weight of 1 metre of the iron bar is 10 times more than the weight of 0.1 metre.

→ $0.5 \times 10 = 5$ (kg)

So, $12 \div 2.4 = 5$ (kg)

Therefore, the weight of per metre iron bar is 5 kg.

Tuli's idea

The weight of 24 metres of the iron bar is 10 times more than the weight of 2.4 metres.

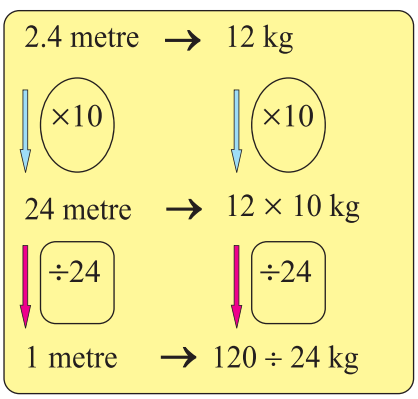
→ $12 \times 10 = 120$ (kg)

Therefore, the weight of 1 metre of the iron bar is $\frac{1}{24}$ of 120 kg

→ $120 \div 24 = 5$ (kg)

So, $12 \div 2.4 = 5$ (kg)

Therefore, the weight of per metre iron bar is 5 kg.



1 Fill in the blanks.

(1) $3 \div 1.5 = (3 \div 15) \times$ ☐ $=$ ☐

(2) $18 \div 1.2 = (18 \div 12) \times$ ☐ $=$ ☐

(3) $5 \div 0.25 = (5 \div 25) \times$ ☐ $=$ ☐

(4) $2 \div 0.125 = (2 \div 125) \times$ ☐ $=$ ☐

2 Do the division.

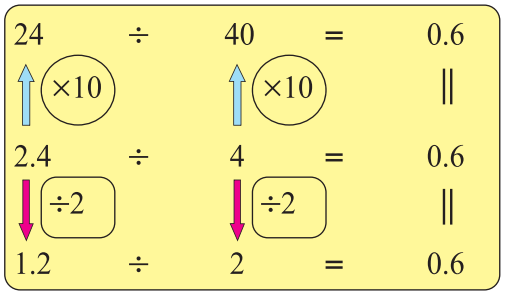
(1) $7 \div 1.4$ (2) $10 \div 2.5$ (3) $48 \div 1.2$

(4) $8 \div 0.4$ (5) $36 \div 0.6$ (6) $40 \div 0.2$

1 Let us calculate the following. What will we get as quotient?

(1) $2.4 \div 4$ (2) $24 \div 40$ (3) $1.2 \div 2$

We get the same quotient in these three calculations. We find the following relation regarding these calculations.



Properties of division

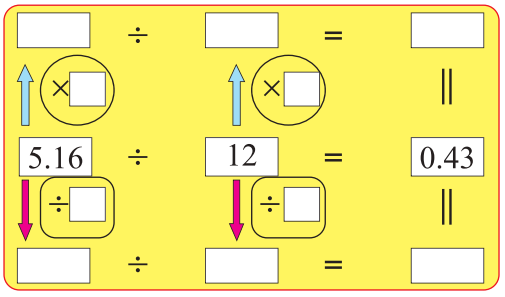
In division, if both the dividend and the divisor are multiplied or divided by the same number, the quotient remains the same.

3 By using this mathematical sentence $5.16 \div 12 = 0.43$, let us calculate and fill in the blanks.

(a) $10.32 \div 24 =$ ☐

(b) $5.16 \div 12 =$ ☐

(c) $0.516 \div 1.2 =$ ☐



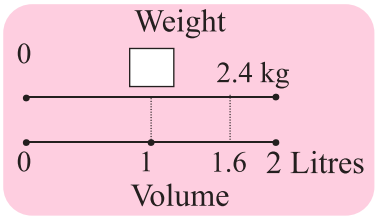
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2 A container has 1.6 Litres of paint and its weight is 2.4 kg. Let us calculate the weight of paint per litre.

Mathematical sentence ☐



Weight ÷ Volume = Weight per litre



Solution

$2.4 \div 1.6 = (2.4 \times 10) \div (1.6 \times \square)$

$= \square \div \square$

$= \square$

Weight per litre ☐ kg

When we multiply 1.6 and 2.4 by 10, we get the same quotient.



3 Let us think about how we will solve the following two divisions.

(1) $4.65 \div 1.5$

$1.5\overline{)4.65}$ → $1.5\overline{)4.65}$ (×10, ×10) →

$$\begin{array}{r} 3.1 \\ 15\overline{)46.5} \\ 45 \\ \hline 15 \\ 15 \\ \hline 0 \end{array}$$

Let us place the decimal point in the place of the dividend's decimal point.





By multiplying both the dividend and the divisor by 10, let us convert the divisor 1.5 into the integer 15.

(2) $2.16 \div 0.24$

$0.24\overline{)2.16}$ → $0.24\overline{)2.16}$ (×100, ×100) → ☐$\overline{)\square}$

By multiplying both the dividend and the divisor by 100, let us convert the divisor 0.24 into an integer.

4 Let us make a story by using the division $2 \div 0.25$

4 Do the division.

(1) $1.8 \div 0.9$ (2) $3.5 \div 0.7$ (3) $0.4 \div 0.5$

(4) $0.48 \div 0.6$ (5) $0.09 \div 0.03$ (6) $0.02 \div 0.05$

5 Do the division.

(1) $4.5 \div 1.5$ (2) $10.4 \div 2.6$ (3) $6.72 \div 3.2$

(4) $36.18 \div 5.4$ (5) $8.84 \div 2.6$ (6) $9.12 \div 0.06$

(7) $16 \div 0.25$ (8) $4 \div 0.125$ (9) $3 \div 0.006$

6 Let us explain what mistakes are there in the following calculations and correct them.

```
   3 1
15)4.6 5
   4 5
   1 5
   1 5
     0
```

```
     4 1
5.2)2 1.3 2
   2 0 8
     5 2
     5 2
       0
```

```
     0.0 2 4
0.125)3
     2 5 0
       5 0 0
       5 0 0
             0
```

7 A rectangular classroom has width of 7.5 metres and an area of 78.75 square metres.

a) What is the length of the class room?

b) What will be the area of the classroom if the width is increased by 2 metres?

Let us try

1. Fill in the following chart.

Name of the place						Number
hundreds (100)	tens (10)	ones (1)	tenths (0.1)	hundredths (0.01)	thousandths (0.001)	
7	2			9	5	723.495
3	3	6	9	1	4	
0	7	5			5	75.845
						203.089
9	3		1	2		9 ☐ 4.1 ☐ 7

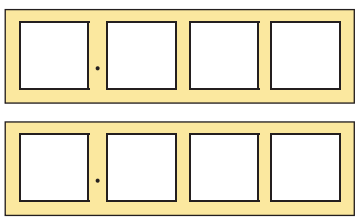
2. I have the following 4 cards.

1	3	5	0

I will use these cards and make the decimal numbers according to the instructions given on the left side.

a) What is the largest number I can make?

b) What is the smallest number I can make?



3. Fill in the blanks.

	How many parts	Common Fractions	Decimal Fractions
1 millimetre	☐ part of ☐ parts of 1 centimetre	$\frac{\square}{\square}$ cm	☐ cm
1 centimetre	☐ part of ☐ parts of 1 metre	$\frac{\square}{\square}$ m	☐ m
1 metre	☐ part of ☐ parts of 1 km	$\frac{\square}{\square}$ km	☐ km

4. Multiply 0.32 by 10 and 100, and then divide them by 10.

10 times of 0.32 is equal to 10 times of 32 units of 0.01	→	☐ units of 0.1	→ ☐
100 times of 0.32 is equal to 100 times of 32 units of 0.01	→	☐ units of 1	→ ☐
Division of 0.32 by 10 is equal to 32 units of one-tenth of 0.01	→	☐ units of 0.001	→ ☐

5. Fill in the blanks.

(1) 0.05×6

☐ 0.01 equal 0.05

(☐ × ☐) 0.01 equal 0.05×6

$0.05 \times 6 =$ ☐

(2) $16.8 \div 0.35 = (16.8 \times$ ☐ $) \div (0.35 \times$ ☐ $)$

$=$ ☐ $\div$ ☐ $=$ ☐

6. A motorcycle travels 212.5 kilometres in 4 hours.

a) How many kilometres does the motorcycle travel in 1 hour?

b) How many hours does the motorcycle take to travel 371.875 kilometres?

Solution

a) The motorcycle travels in 1 hour ☐ ÷ ☐

= ☐ km

b) It takes 212.5 km to travel ☐ hours

„ „ 1 „ „ „ ☐/☐

„ „ 371.87 „ „ „ (☐ × ☐)/☐

= ☐ hours

Let us do

1 Put a tick mark (√) on the correct answer.

(1) Which three fractions below are equal to 0.25?

(a) $\frac{3}{12}, \frac{5}{10}, \frac{6}{12}$ (b) $\frac{1}{4}, \frac{2}{8}, \frac{3}{12}$

(c) $\frac{1}{2}, \frac{4}{8}, \frac{2}{8}$ (d) $\frac{5}{6}, \frac{4}{16}, \frac{5}{10}$

(2) Nishi painted red 0.35 part of a white paper. How much part of the paper remained white?

(a) 0.35 parts (b) 0.55 parts (c) 0.65 parts (d) 0.75 parts

(3) $87 \times 0.001 = ?$

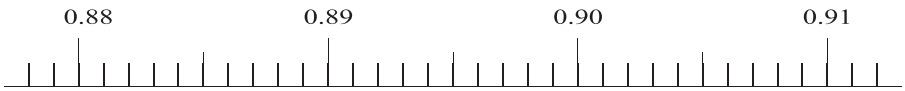
(a) 8.70 (b) 87.00 (c) 0.87 (d) 0.087

(4) $57.7 \div 10 = ?$

(a) 0.577 (b) 5.77 (c) 57.7 (d) 577

2 Express the following numbers in the number line.

0.881, 0.889, 0.899, 0.912



3 How many 0.001s will make the following numbers?

(1) 0.031 (2) 0.296 (3) 1.047 (4) 1.03

4 Multiply the following numbers by 10 and 100, and then divide them by 10.

(1) 0.6 (2) 0.49 (3) 1.31 (4) 8.52

5 Convert the following simple fractions into decimal fractions and the decimal fractions into simple fractions. When possible, express in their lowest form.

(1) $\frac{3}{25}$ (2) $\frac{3}{4}$ (3) 0.6 (4) 0.25 (5) 0.075

6 The highest temperature on Saturday was 32.55 degree Celsius and on Sunday it was 28.87 degree Celsius. What is the difference between the temperatures on Saturday and Sunday?



7 Answer the following questions.

(1) How many 0.1s make 3.5?

(2) How many 0.01s add up to 1.04? (3) How many 0.001s make 23.456?

8 Multiply.

(1) 0.4×2 (2) 0.5×8 (3) 0.06×5 (4) 0.004×5

9 Divide.

(1) $2.3 \div 3$ (2) $4.08 \div 5$ (3) $0.845 \div 7$ (4) $2.954 \div 5$

10 Fill in the blanks.

(1) $2 \div 1.6 = (2 \div 16) \times \square = \square$

(2) $3 \div 0.25 = (3 \div 25) \times \square = \square$

(3) $5 \div 0.125 = (5 \div 125) \times \square = \square$

11 Which quotient in the following division is larger than the dividend?

(1) $1.2 \div 1.2$ (2) $3.5 \div 3.5$ (3) $0.8 \div 0.8$

12 One inch is equal to 2.54 cm. How many centimetres are equal to 8.5 inch?

13. A car travels 42.8 km in one hour. How many kilometres will the car travel in 15.5 hours?

14 The width and the length of a rectangular land are 4.75 metres and 12.8 metres respectively. Calculate the area of the land.

15 A teacher has given 0.24 metre of ribbon to each of 75 students. How many metres of ribbon in total has he given to all the students?

16 There is 0.334 Litres of milk in a packet. How many litres of milk are there in 50 packets?

17 A car travels 114.5 kilometres in 2.5 hours. How many kilometres will the car travels in one hour?

18 The area of a rectangular garden is 729 sq. metres. If width is 22.5 metre, find its length.

19 Reza's weight is 36.5 kg. The weight of his younger brother and his father is 0.8 times and 1.6 times his weight respectively.

a) Determine the weight of his brother.

b) Find the difference between his father's and brother's weight.

Chapter 6

Percentage

In a school, there are 20 girls among 50 students in grade 4 and 12 girls among 25 students in grade 5. Comparatively, in which grade are there more girls?

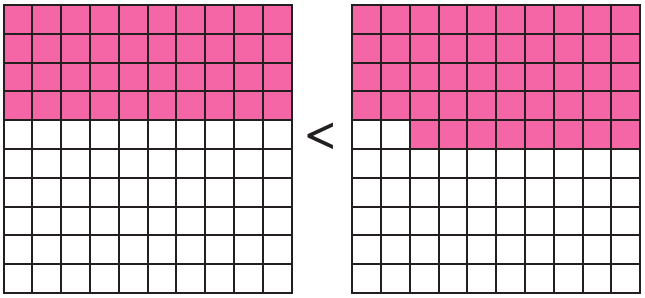


Since the number 20 is larger than 12, I think the number of girl students in grade 4 is comparatively higher.

Class	Total	Girls
Grade 4	50	20
Grade 5	25	12

In fractions, the number of girls among the total students in Grade 4 is $\frac{20}{50}$, and the number of girls among the total students in Grade 5 is $\frac{12}{25}$. As $\frac{20}{50} = \frac{40}{100}$ and $\frac{12}{25} = \frac{48}{100}$ let us look at the following boxes accordingly.





Students of Grade 4 Students of Grade 5

Therefore, $\frac{20}{50} < \frac{12}{25}$

That means, the number of girl students in Grade 5 is comparatively more.

$\frac{20}{50} = \frac{40}{100} = 40 \times \frac{1}{100} = 40\%$. Similarly, $\frac{12}{25} = \frac{48}{100} = 48 \times \frac{1}{100} = 48\%$

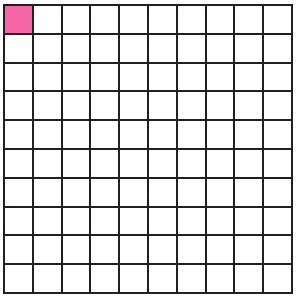
The '%' symbol is the percent symbol. A percentage is a fraction whose numerator is 1 and denominator is 100.



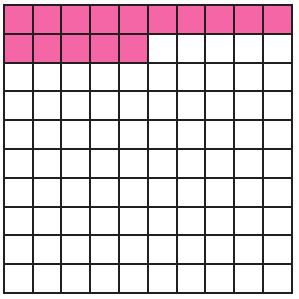
The '%' symbol indicates $1\% = 1 \times \frac{1}{100} = \frac{1}{100} = 0.01$

Similarly, $2\% = 2 \times \frac{1}{100} = \frac{2}{100} = 0.02$

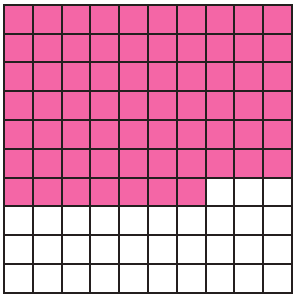
$1\% = \frac{1}{100}$
$= 0.01$



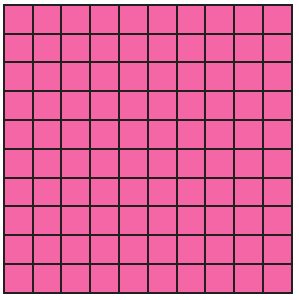
$15\% = 15 \times \frac{1}{100}$
$= \frac{15}{100}$
$= 0.15$



$67\% = 67 \times \frac{1}{100}$
$= \frac{67}{100}$
$= 0.67$

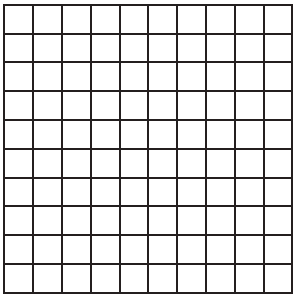


$100\% = \frac{100}{100}$
$= 1$

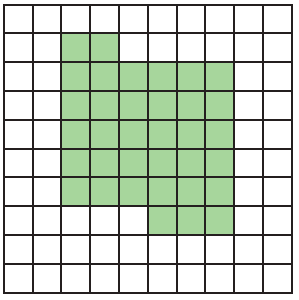


1 Fill in the blanks and colour the percentage section.

$37\% = \frac{\square}{\square}$
$= \square$



$\square\% = \frac{\square}{\square}$
$= \frac{\square}{\square}$
$= \square$



2 Express the following percentages into common and decimal fractions.

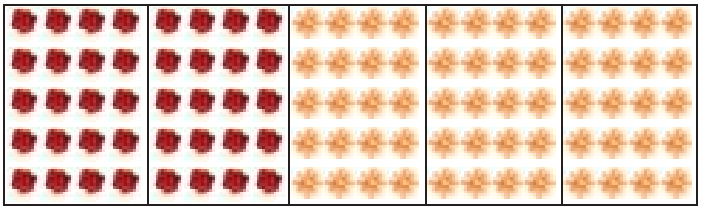
(1) $80\% = \frac{\square}{\square} = \square$ (2) $74\% = \frac{\square}{\square} = \square$ (3) $81\% = \frac{\square}{\square} = \square$

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1 Express the following fractions in %.

(1) $\frac{36}{100} = \square$ (2) $\frac{27}{50} = \square$ (3) $\frac{26}{20} = \square$ (4) $\frac{3}{10} = \square$

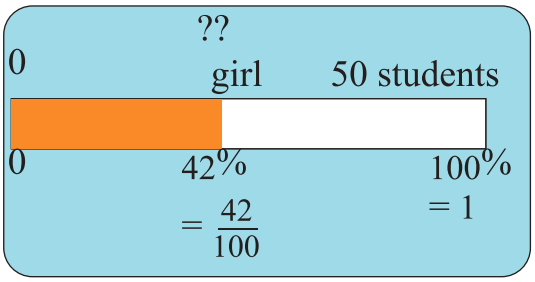
2 Among the following flowers, 40% are roses. How many parts of the total flower are roses?



The part of roses in % is

$= \square\% = \frac{\square}{100} = \frac{\square}{\square}$

3 In a school 42% of the total 50 students in grade 5 are girls. How many girls are there in that grade?



42% is $42 \times \frac{1}{100} = \frac{42}{100}$

$\frac{42}{100}$ of 50 is $\frac{\square \times \square}{\square}$

$= \square$



Out of 100 students number of girls 42

" " 1 " " " " $\frac{\square}{\square}$

" " 50 " " " $\frac{\square \times \square}{\square}$

$= \square$ girls

We can solve the problem using the unitary method.



3 The total population of Sukhipur village is 1280. 80% of them are farmers.

(a) Find the number of farmers.

(b) Find the number of people who are not farmers.

(a) Number of farmers

80% is $\frac{80}{100}$

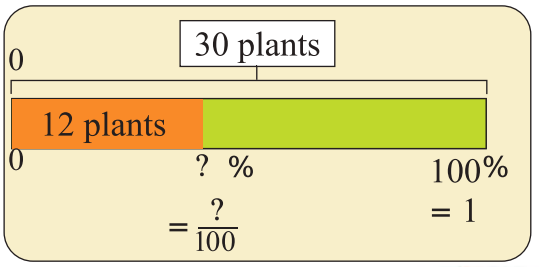
$\frac{80}{100}$ of 1280 is $\frac{\square \times \square}{\square} = \square$

(b) The number of people who are not farmers

4 12 of the 30 plants in a garden are medicinal plants. What percentage of medicinal plants are there in the garden?



$\frac{12}{30} = \frac{2}{5} = \frac{}{100} = \ldots\ldots\%$



Let's see if we can solve it using a unitary method.



Among 30 plants, medicinal plants are 12

" 1 " " " " $\frac{\square}{\square}$

" 100 " " " " $\frac{\square \times \square}{\square}$

$= \square$

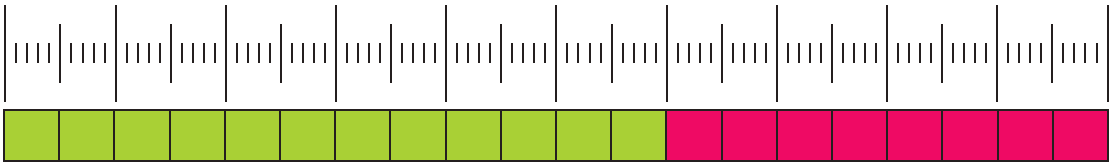
4 Fill in the blanks.

(1) 25 Litres of 50 Litres is $\square$ %

(2) 20% of 120 kg is $\square$ kg

(3) 16 people are 32% of $\square$ people.

5 Using the ruler as shown in the figure, find the percentage of bars that are green and the percentage that are red.



green part = ☐ % red part= ☐ %

red part = ☐ % green part = ☐ %

green part = ☐ % red part = ☐ %

red part = ☐ % green part = ☐ %

6 The population of Phulkuri village was 2800 last year. If the population increases by 3% this year, what will be the total population?

3% is $\frac{3}{100}$

$\frac{3}{100}$ of 2800 is $\frac{\square \times \square}{\square} = \square$

The current population is = ☐ + ☐

= ☐

Let us solve the problem using unitary method.

7 The populations of two cities are 45680 and 52520, respectively. A census showed that the number of literate people in those two cities is 34260 and 36764, respectively. Which city has a higher percentage of literate people?



Here we see that the number of literate people in the second city is higher.

Although the number of literate people is higher, will the percentage be higher? Let's do the calculations.



Calculation of the 1st city

Among 45680 people literate people 34260

" 1 " " " $\frac{\square}{\square}$

" 100 " " " $\frac{\square \times \square}{\square}$

$= \square$

That means, $\square$ % people are literate.

Calculation of the 2nd city

Among 52520 people literate people 36764

" 1 " " " $\frac{\square}{\square}$

" 100 " " " $\frac{\square \times \square}{\square}$

$= \square$

That means, $\square$ % people are literate.

Then it shows that $\square$ city has a higher percentage of literate people.

A fruit seller bought a dozen bananas at 50 taka and sold them in the market at 58 taka. What is his profit in percentage?



On 50 taka, the profit is 8 taka.
On 100 taka, the profit will be 16 taka.

Then we can call it 16% profit.



When we buy or sell something for business, there is usually a profit or loss.

- If the selling price is more than the cost price, there is a profit.

Profit = Selling price – Cost price. Selling price > Cost price

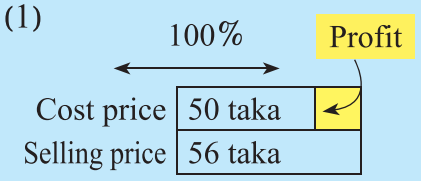
- If the selling price is less than the cost price, there is a loss.

Loss = Cost price – Selling price. Selling price < Cost price

Profit or loss is always calculated on the cost price.

1 (1) If a pen is bought at 50 taka and sold at 56 taka, what is the profit %?
(2) If a notebook is bought at 15 taka and sold at 12 taka, what is the loss %?

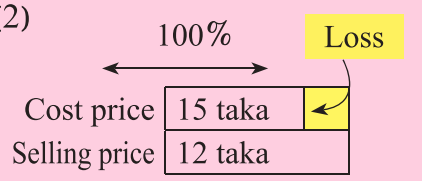
(1)



The amount of profit is 56 – 50 = 6 taka
On 50 taka, the profit is 6 taka.
„ 1 „ „ „ ☐/☐
„ 100 „ „ ☐ × ☐ / ☐
= ☐ taka.

That is, the profit is ☐ %.

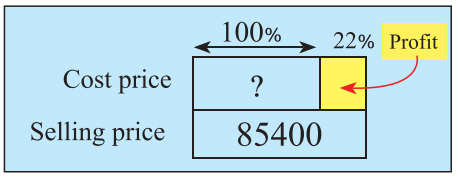
(2)



The amount of loss is 15 – 12 = 3 taka
On 15 taka, the loss is 3 taka.
„ 1 „ „ „ ☐/☐
„ 100 „ „ ☐ × ☐ / ☐
= ☐ taka.

That is, the loss is ☐ %.

2 Kashem bought a cow and sold it at 85400 taka with a profit of 22%. What is the cost price of the cow?



Solution

Selling with a 22% profit means that on 100 taka, the profit is 22 taka.

That means, if the cost price is 100 taka, the selling price is 100 + 22 = 122 taka.

If the selling price is 122 taka, the cost price is 100 taka.

" " 1 " " $\frac{100}{122}$

" " 85400 " " $\frac{\square \times \square}{\square}$

$= \square$ taka

So, the cost price of the cow is $\square$ taka.

1 Robi sold a table at 7040 taka, at 12% less than the cost price. How much was the cost price of the table? Discuss in groups with your classmates how to solve the problem by drawing a picture.

Let us draw a picture.

Solution

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Mr. Alam invests 20000 taka in a bank with an annual profit of 7%. How much profit will he get every year?

On 100 taka, the profit is 7 taka.

" 1 " " $\frac{7}{100}$

" 20000 " " $\frac{7 \times 20000}{100}$

$= 1400$ taka

He will get a profit of 1400 taka.

A profit rate or annual profit of 7% means that a 1-year profit of 100 taka is 7 taka.



Principal = 100 taka

Annual profit 7 taka

Invested amount is called principal

Then we can say
Profit = Principal × Profit rate

1 An entrepreneur took a loan of 50000 taka from a bank at an profit of 8%. How much profit will he pay each year?

On 100 taka profit ☐ taka

" 1 " " $\frac{\square}{\square}$

" 50000 " " $\frac{\square \times \square}{\square}$

$= \square$ taka

An profit of ☐ taka should be paid every year.

2 Let us discuss the following problem with classmates and solve it in groups.

Sohail invested 230500 taka in his farm. By the end of the year, it increased to 248940 taka. What is the percentage of profit did he get?

Here, Profit = 248940 - 230500 = 18440 taka
That means, the profit by the end of the year on 230500 taka is 18440 taka.
We know, Profit = Principal× Rate of profit

Therefore, rate of profit is $= \frac{18440}{230500}$

$= \square$ %

Rate of profit means how much profit per year on 100 taka

3 Tanima took a loan of 20000 taka for 3 years from the bank. Annual rate of profit is 6%. After three years, how much money will she pay as profit?



By the end of 3 years, 3 times the annual profit has to be paid.

By the end of 1 year	Principal	Profit		
By the end of 2 years	Principal	Profit	Profit	
By the end of 3years	Principal	Profit	Profit	Profit

That means, Tanima has to pay profit $= \square \times 6\ \% \times \square$ taka

$= \square \times \frac{6}{100} \times \square$ taka

$= \frac{\square \times 6 \times \square}{100}$ taka

$= \square$ taka

After three years, Tanima will pay a profit of $\square$ taka.

4 If the profit of 5000 taka for 6 years is 2700 taka, what will be the annual profit rate?

On 5000 taka, the profit in 6 years is 2700 taka.

Profit of 5000 taka in 6 years 2700 taka

" 5000 " 1 " " $\frac{\square}{\square}$

" 1 " 1 " " $\frac{\square}{\square \times \square}$

" 100 " 1 " " $\frac{\square \times \square}{\square \times \square}$

$= \square$ taka

That is, annual profit rate is $\square$ %

5 What will be the profit on 10,000 taka in 9 months at an annual profit rate of 6%?

1 year = 12 months

On 100 taka profit in 12 months 6 taka

" 1 " 12 " " $\frac{\square}{\square}$

" 1 " 1 " " $\frac{\square}{\square \times \square}$

" 10000 " 9 " $\frac{\square \times \square \times \square}{\square \times \square}$

$= \square$ taka

Profit $\square$ taka.

Let us try

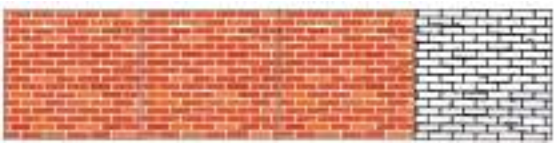
(1) What percentage of the gallery is filled up and what percentage is empty in the next picture?



Filled up part = ☐ %

Empty part = ☐ %

(2) $\frac{3}{4}$ of a wall in the picture is painted. So, how much percentage of the wall is painted?



(3) A product was sold at 31088 taka with a profit of 16%. How much was the cost price of the product?

Selling price at ☐ % profit (☐ + ☐) taka = ☐ taka

If the selling price is ☐ taka, the cost price is ☐ taka

„ „ „ „ „ ☐ „ „ „ „ „ $\frac{\square}{\square}$ taka

„ „ „ „ „ ☐ „ „ „ „ $\frac{\square \times \square}{\square} = \square$ taka

So, the cost price of the product is ☐ taka

(4) Out of 450 students of a school, 48% are boys. How many boys are there in that school?

☐ % are $\frac{\square}{\square}$

☐ of $\frac{\square}{\square}$ are $\frac{\square}{\square} = \square$

(5) What is the profit on 8,000 taka in 6 years at an annual profit rate of 12 percent?

$$\text{Profit} = \frac{\square \times \square \times \square}{100} = \square \text{ taka}$$

Let us do

1 Let us put a tick mark (√) on the correct answer.

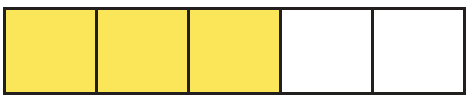
(1) If 50% of a number is 6, what is the number?

(a) 12 (b) 24 (c) 30 (d) 40

(2) Which one of the following is correct?

(a) $\frac{9}{25} = 45\%$ (b) $\frac{9}{25} = 36\%$ (c) $\frac{9}{25} = 18\%$ (d) $\frac{9}{25} = 9\%$

(3) What % area of the figure is colored?



(a) 3% (b) 15% (c) 60% (d) 75%

(4) How many liters is 10% of 50 liters?

(a) 5 (b) 10 (c) 40 (d) 50

(5) If 100% means 1, then what is 150%?

(a) 15 (b) 1.5 (c) 0.15 (d) 0.015

2 In the picture to the right, what percentage of the mangoes are raw?



3 Fill in the blanks.

(a) 24 people are ☐ % of 60 people.

(b) 165% of 650 taka is ☐ taka.

(c) 56% of ☐ litchis are 42 litchis.

4 One day in a factory, 40% of 90 workers were absent. How many workers were present in the factory on that day?

5 Monobi Chakma brought a banana bunch with 10 dozen bananas from the garden. He found that 25 percent of the bananas in the bunch were rotten. So how many ripe bananas were there?



6 A loan was taken from a bank at an annual profit rate of 13%. A profit of 8840 taka was paid after one year. What was the principal amount?

7 A loan of 50000 taka was taken from the bank for 3 years with an annual profit of 12.5%. What amount of taka should be paid back after 3 years?

8 In a shop, a product of 3200 taka was sold at a discount of 20%. What was the selling price of the product?

9 A seller bought vegetables from a farmer and sold them at 6300 taka with a profit of 40%. What was the cost price of vegetables?

10 If the cost price of an item is 150 taka, for what price should it be sold to get a 30 % profit?

11 The population of a coastal Upazila was 76350. 4% of people migrated due to the rise in sea levels at the coast. What is the current population of that upazila?

12 If 600 taka is invested at an annual profit rate of 5%, what will be the total amount, including profit, after five years?

13 In a shoe shop, it was announced to sell shoes at a discount of 26%. Manoranjan bought two pairs of shoes for 2590 taka and 3108 taka.

(a) What was the actual price of each pair of shoes?

(b) How much money did he save on buying shoes?

14 Mr. Matin's monthly income is 55500 taka, and out of that, he spends 13875 taka on house rent. Mr. Kabir's monthly income is 48000 taka, and he spends 14400 taka on house rent.

(a) Express the percentage of their income that is spent on house rent.

(b) Who does spend a higher percentage of money on rent?

Chapter 7

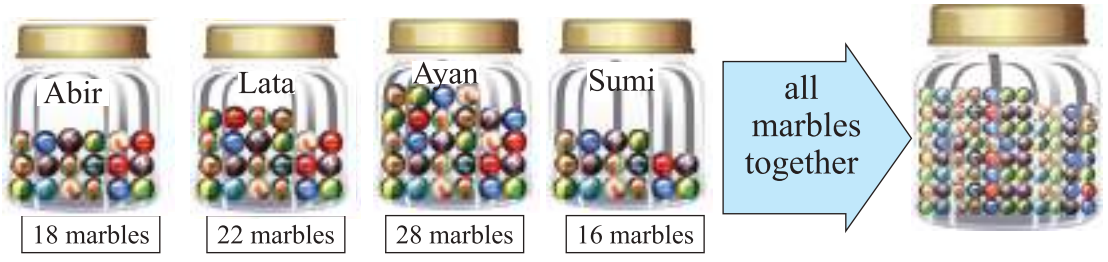
Average

Abir, Lata, Ayan and Sumi have 18, 22, 28 and 16 marbles, respectively. If we want to give an equal number of marbles to each of them, how many marbles will each of them get?





At first, we can put all the marbles together.



After putting together all the marbles, we have

$\square + \square + \square + \square = \square$ marbles

Then each person will get

$\square \div 4 = \square$ marbles



As we have to give an equal number of marbles to 4 persons, we can divide the total number of marbles by 4.

The average is found by dividing the total values of the same kind by the number of values.

Average = Sum of values of the same kind ÷ number of values

2026

1 Fill in the blanks.

(1) The average of 5, 8, 6, 9, 6 and 8

5+ 8+ 6 + 9 + 6 + 8 = 42 average = 42 ÷ 6 = ☐

(2) The average of 7, 9, 5, 0, 5, 11, 6, 12 and 8

7 + 9 + 5 + 0 + 5 + 11 + 6 +12 + 8 = ☐ average = ☐ ÷ 9= ☐

(3) The average of 12, 10, 8, 7, 15, 13, 9, 19 and 15

12+ 10 + 8 + 7 + 15 + 13 + 9 + 19 + 15 = ☐ average = ☐ ÷ ☐ = ☐

1 Find the average of the following numbers.

(1) 4, 3, 7, 5, 3

(2) 2, 3, 5, 8, 4, 2, 5, 2, 4, 3, 7

(3) 8, 9, 12, 11, 7, 10

(4) 17, 16, 20, 19, 15, 21

2 The average of the number of mangoes in 3 baskets is 25. There are 18 and 21 mangoes in the first 2 baskets. How many mangoes are there in the 3rd basket?



We can find the number of mangoes in 3rd basket by subtracting the number of mangoes in all three baskets from the total number of mangoes in the first 2 baskets.



Step-1 : First, we have to determine the total number of mangoes in 3 baskets.

The total number of mangoes in 3 baskets = 25 × 3 = ☐

Step-2 : Then we have to determine the total number of mangoes in 2 baskets.

The total number of mangoes in 2 baskets = ☐ + ☐ = ☐

Step-3 : Now we have to subtract the total number of mangoes in 3 baskets from the total number of mangoes in 2 baskets.

Therefore, the mangoes in the third basket = ☐ − ☐ = ☐

It can also be solved by writing a mathematical sentence.



The mathematical sentence will be (25 × 3) − (18 + 21) = ☐

3 The number of metres Latif's father walked each day for a week is given in the chart below. How many metres did Latif's father walk on average per day?



Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Metre	320	280	260	345	350	300	420



First, we have to calculate how many metres Latif's father walked in the whole week. Then, as one week equals 7 days, we can find the average per day by dividing the total distance by 7.

Step-1: First, let us calculate the total distance for the whole week.

Latif's father walked in the whole week -

$\square + \square + \square + \square + \square + \square + \square = \square$ metres

Step-2: As 1 week = 7 days, let us divide the whole distance by 7.

Therefore, Latif's father walked on average of $\square \div \square = \square$ metres per day

1 The average of 7 numbers is 40. 3 more numbers are added to it. The average of these 3 numbers is 21. What is the average of all 10 numbers?

2 The average weight of 11 people is 70 kg.

a) What is the total weight of the 11 people?

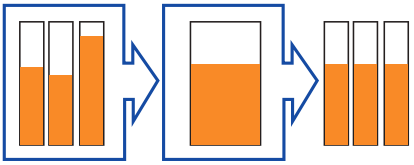
b) If one person of weight 90 kg leaves among them, what will be the average weight of the remaining people?

4 According to the picture on the right, three glasses A, B and C contain 100 mL, 80 mL and 150 mL of sherbet, respectively. What is the average amount of sherbet in each glass?





Let us pour the sherbet of glass C into glass A and B until the volume of sherbet in all 3 glasses is equal.



I will put all the sherbet from 3 glasses in a container and divide it equally among the 3 glasses.



If we put 3 glasses of sherbet together, then the total volume of sherbet will be

☐ + ☐ + ☐ = ☐ (mL)

Therefore, the volume of sherbet per glass will be ☐ ÷ ☐ = ☐ (mL)

That means, the average volume of sherbet in each of the 3 glasses will be ☐ (mL)

3 A chart of the highest temperatures of Dhaka city in 2023 is given below. Let us find the average temperature of that year from the chart.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (^{0}C)	23.4	28.7	32.1	33.5	33.4	32.6	32.3	31.1	32.4	32.7	29.7	25.0

Solution

5



The average age of the 30 students in our class is 10 years. If we add Shafiq sir's age, the average age becomes 11 years. Now, Let us find out the age of our Shafiq sir.



But how do we find it?

The total number of students is 30
Our average age is 10 years.
The sum of our ages will be ☐ × ☐ = 300 years
Including Shafiq sir, we are 30 + 1 = 31 persons.
Including Shafiq sir, our average age is 11 years.
The sum of the ages of 31 persons is 31 × ☐ = ☐ years.
Therefore, the age of Shafiq sir is ☐ − 300 = ☐ years.

6 In a week, the average temperature of Monday, Tuesday and Wednesday was 30° Celsius (°C), and the average temperature of Tuesday, Wednesday, and Thursday was 33 °C. If the temperature on Thursday was 35 °C, what was the temperature on Monday?

	Mon	Tue	Wed	Thu
The average temperature on Monday, Tuesday and Wednesday was 30 °C	90°C			
Total temperature of Monday, Tuesday and Wednesday was ☐ × ☐ = ☐ °C				
The average temperature on Tuesday, Wednesday and Thursday was 33 °C		99°C		
Total temperature of Tuesday, Wednesday and Thursday was ☐ × ☐ = ☐ °C				
As given, the temperature on Thursday was 35°C				35°C
The sum of the temperatures on Tuesday and Wednesday was ☐ − ☐ = ☐		Tue & Wed		
Total temperature of Monday, Tuesday, and Wednesday was 90°C. The temperature on Monday was				
	Mon, Tue & Wed			
☐ − ☐ = ☐ °C	Mon	Tue & Wed		

4 The average age of 15 people is 38 years. Among them, the average age of 3 people is 50 years. Then what will be the average age of the remaining 12 people?

5 In a week of January, the average temperature of the first two days was 15.5 °C. And the average temperature of the last three days was 17 °C. If the average temperature of the entire week was 18 °C, what would be the average temperature of the 2 days in between?

6 The monthly patient attendance at a local community clinic for a particular year is given below. How many patients on average received treatment per month in that year?



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The number of patients	703	889	823	915	698	876	892	783	884	698	985	922

7 Let us put the total attendance of the students in our class for last week in the table below and calculate the average attendance for the week.

Day	Sunday	Monday	Tuesday	Wednesday	Thursday
Attendance					

Solution

The heights of five students are given below. How can we easily find their average height?

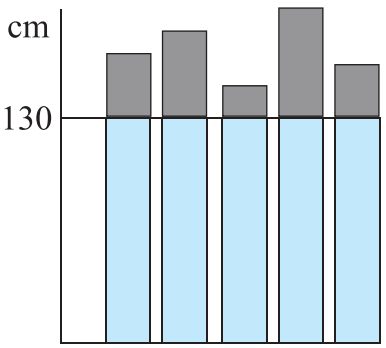
Name	Lima	Tushar	Sheuly	Sabuj	Kanak
Height (cm)	145	149	133	152	142

The average of the heights:
$(145 + 149 + 133 + 152 + 142) \div 5 = 144.2$ cm

Can we find the average easily by any other method?



I know an easy method.

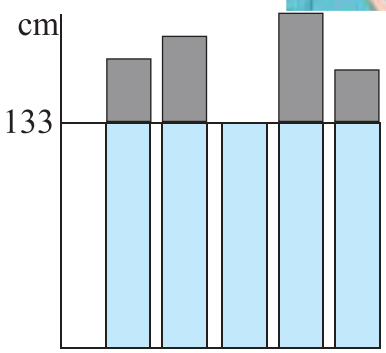


The differences of the values are:
15 cm, 19 cm, 3 cm, 22 cm and 12 cm
Then I have calculated the average of the values.
$(15 + 19 + 3 + 22 + 12) \div 5 = 14.2$ cm
Finally, I have added 14.2 cm to 130 cm.
$130 + 14.2 = 144.2$ cm.
Therefore, the average height is 144.2 cm.

I have also followed the same method. However, I have calculated the difference by considering the lowest value as 133 cm.



The lowest value is 133 cm, so the differences of the values are
12 cm, 16 cm, 0 cm, 19 cm and 9 cm
Then I have calculated the average of the values
$(12 + 16 + 0 + 19 + 9) \div 5 = 11.2$ cm
Finally, I have added 11.2 cm to 133 cm.
$133 + 11.2 = 144.2$ cm
Therefore, the average height is 144.2 cm.



Have you noticed something? The average value is always close to the middle number.



1 First, we will be divided into groups of 5 people. Then we will measure our height and fill in the chart below. And we will determine the average height of our group.

Name					
Height (cm)					

The average height is

The lowest value = ☐ cm

The average of the differences from the lowest value

(... + ... + ... + ... + ...) ÷ ... = ☐ cm

Therefore, the average is ☐ + ☐ = ☐ cm

2 The chart of the total runs of the Bangladesh cricket team scored against India and Sri Lanka in different one-day international matches at various times is given below.

Opponent	Runs per match				
India	256	265	182	271	322

Opponent	Runs per match		
Sri Lanka	306	233	232

Now we want to find the average of the total runs that the Bangladesh cricket team scored against both India and Sri Lanka. Let us observe Rafi's method and find out what mistake he made.

Rafi's Method

The average runs against India:

(256 + 265+ 182 + 271 + 322) ÷ 5 = 259.2 runs

The average runs against Sri Lanka:

(306 + 233 + 232) ÷ 3 = 257 runs

The average runs against both teams:

(259.2+ 257) ÷ 2 = 258.1 runs



Therefore, the average of the total runs of the Bangladesh team against both teams is 258.1

Let us try

1. To find the average we have to divide the sum of the given values by ☐

2. Using any of the previous methods, let us find the average of the following values:

86 Litres, 103 Litres, 79 Litres, 80 Litres, 108 Litres, 98 Litres, 90 Litres

☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ = ☐

Average = ☐ ÷ ☐ = ☐

3. The average run of a cricketer in 9 innings is 49. How many runs will he have to score in the 10th innings to make the average runs 50 out of 10 innings?



Step-1: First, let us calculate the total runs of 9 innings.

☐ × ☐ = ☐ runs

Step-2: Then let us calculate the total runs that he scored in his 10 innings.

☐ × ☐ = ☐ runs

Step-3: So, the runs that he scored in his 10th innings are

☐ − ☐ = ☐ runs

4. The daily maximum temperatures for 6 days in January and 5 days in February are given below. Let us find the average temperature.

Month	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6
January	23°C	18°C	20°C	24°C	15°C	16°C
February	22°C	24°C	27°C	29°C	25°C	

The sum of the temperatures of 6 days in January is = ☐

The sum of the temperatures of 5 days in February is = ☐

The sum of the temperatures of January and February is = ☐ + ☐ = ☐

The average temperature = ☐ ÷ ☐ = ☐

Let us do

1 Put a tick mark (√) on the correct answer.

(1) What is the average of the numbers 2, 4, 5, 7, and 9?

(a) 27 (b) 5.5 (c) 5.4 (d) 5

(2) A cricketer scored 48, 52 and 53 runs in three ODI matches. How many runs did he score on average?

(a) 41 runs (b) 49 runs (c) 50 runs (d) 51 runs

2 The average of 50 numbers is 38. If two numbers 45 and 55 are removed, what will be the average of the remaining numbers?

3 The average of a cricketer's runs in 16 innings is 31.75. If he scores 108 runs, 34 runs and 47 runs in the next 3 innings, what will be his average run?

4 In a class, the average age of 24 students and their teacher is 15 years. If we exclude the teacher's age, the average age of the 24 students reduces by 1 year. Then what will be the age of the teacher?

5 In a class, the average age of 20 students is 10 years. When 10 more students are admitted, the average age of all 30 students becomes 11 years. What will be the average age of newly admitted students?

6 The heights of the 5 students is given in the following chart:

Name	Sobuj	Rakhi	Mokbul	Samia	Rita
Height (cm)	142	144	137	146	141

a) What is the average height of the students?

b) What is the average height of the 2 tallest students?

c) What is the difference between the average height of the two tallest students and the average height of the two shortest students?

7 The weight of 6 guavas is 58 grams, 50 grams, 60 grams, 52 grams, 54 grams and 56 grams, respectively.

a) What will be the average weight of the guavas?

b) What will be the average weight of the first 3 guavas?

c) What will be the difference between the average weight of the first 3 guavas and the last 3 guavas?

Chapter 8

Measurement

Length Measurement

What is the relation among the units of length measurement?

Relation among different units of length measurement

Large ↑

1 kilometre (km) = 1000 m
1 hectometre (hm) = 100 m
1 decametre (dam) = 10 m

1 metre (m) = 1 m

Small ↓

1 decimetre (dm) = 0.1 m or $\frac{1}{10}$ m
1 centimetre (cm) = 0.01 m or $\frac{1}{100}$ m
1 millimetre (mm) = 0.001 m or $\frac{1}{1000}$ m

1 kilometre = 10 hectometre
1 hectometre = 10 decametre
1 decametre = 10 metre
1 metre = 10 decimetre
1 decimetre = 10 centimetre
1 centimetre = 10 millimetre

1 Fill in the blank boxes with numbers.

Let us discuss in groups and solve it.



(1) 2235 m = ☐ km = ☐ hm = ☐ dam

(2) 56 m = ☐ dm= ☐ cm = ☐ mm

(3) 3578 cm = ☐ m = ☐ km

Let us explain how we converted the measurements.

2026

2 Calculate and express in the given units.

(1) 3 km + 600 m = ☐ + ☐ = ☐ dam

(2) 3 km 700 m – 900 m = ☐ – ☐ = ☐ hm

(3) 20 hm + 200 m − 1 km 400 m = ☐ + ☐ − ☐

= ☐ m

1 Arrange using < or > symbols, following the instructions given next to them.

(1) 1 decametre, 13 metres, 15000 millimetres, 1900 centimetres (smaller to larger)

(2) 1 kilometre, 1.5 hectometres, 1200 centimetres, 13500 millimetres (larger to smaller)

(3) 2600 metres, 37000 centimetres, 1 decametre, 20000 millimetres (larger to smaller)

(4) 1500 centimetres, 12400 millimetres, 2 kilometres, 1 hectometre (smaller to larger)

3 If the length of a bench is 1 metre 25 centimetres, what is the length of 3 similar benches in centimetres?

The length of a bench is 1 metre 25 centimetres = ☐ + ☐ = ☐ cm.

Then the length of 3 benches = ☐ × ☐ = ☐ centimetres.

4 Maruf walks 3 km in half an hour. So how many metres does he walk every 5 minutes?

3 km = ☐ × ☐

= ☐ metres.

Maruf walks every 1 minute

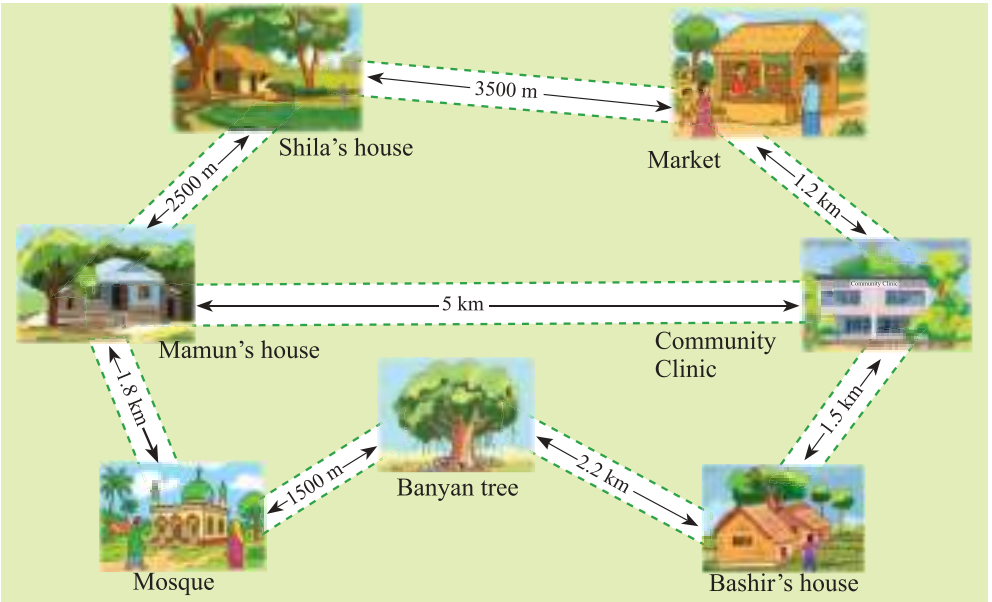
= ☐ ÷ ☐ = ☐ metres.

Therefore, he walks every 5 minutes

= ☐ × ☐ = ☐ metres.



5 Look at the picture and fill in the blank boxes below.



(1) The distance from Bashir's house to the mosque is ☐ kilometres.

(2) The distance from Shila's house to the community clinic is ☐ metres.

(3) The distance from banyan tree to the community clinic is ☐ hectometres.

(4) Mamun will be able to reach the market by crossing a minimum distance of ☐ decametres.

6 Make 2 questions about distance using the picture above.

Question 1	Question 2

1 Anushka's house is 9.5 kilometres from Aritra's house. Aritra walks 500 metres and travels 7.5 kilometres by bus to reach Anushka's house. He takes a rickshaw for the rest of the way.

(a) How many metres does Aritra travel on foot and by bus?

(b) How many kilometres does Aritra travel by rickshaw?

Weight measurement

What is the relation among the units of weight measurement?

Relation among different units of weight measurement

Large ↑

1 kilogram	(kg)	= 1000 g
1 hectogram	(hg)	= 100 g
1 decagram	(dag)	= 10 g
1 gram	(g)	= 1 g

Small ↓

1 decigram	(dg)	= 0.1 g = $\frac{1}{10}$ g
1 centigram	(cg)	= 0.01 g = 1/100 g = $\frac{1}{100}$ g
1 milligram	(mg)	= 0.001 g = $\frac{1}{1000}$ g

1 kilogram = 10 hectograms
1 hectogram = 10 decagrams
1 decagram = 10 grams
1 gram = 10 decigrams
1 decigram = 10 centigrams
1 centigram = 10 milligrams



So many units of measurement, I can't remember exactly.

Take a look and see that they are the same as the previous units of length. Kilo, hecto, deca……only gram is given in place of metre.



1 Johnny's father came with bazar. The quantity of each item is given in the list below. Now, if Jhonny expresses the weight of the things in the units given in the list, then what will it be?

Product description	Quantity	Express in given units
1 bag of rice	25 kilograms	..... hectograms
1 packet of sugar	500 grams	..... decigrams
1 packet of salt	150 decagrams	..... kilograms
1 packet of flour	2 kilograms	..... decagrams
1 packet of masala	50 grams	..... milligrams

‘All over Bangladesh, 5 Tons’ is written on a truck. What does it mean?



This means that the truck can carry 5 tons of goods.



To measure heavy materials like rods, sand, cement, etc., we use units like metric ton, quintal.



100 kilograms (kg) = 1 quintal
10 quintal = 1 metric ton
Therefore, 1000 kilograms (kg) = 1 metric ton

That means the truck has a capacity of carrying 5000 kg or 5 metric tons.



1 Fill in the blank boxes with > or < symbol.

(1) 1.5 kg ☐ 1600 grams

(2) 3900 kg ☐ 35 quintal

(3) 5 quintal ☐ 450 kg

(4) 12000 kg ☐ 10.5 metric tons

1 Calculate and express in the given units.

(1) 3780 g + 2310 g = ☐ kg

(2) 18 kg 400 g + 12 kg 600 g = ☐ hg

(3) 3 kg 200 g – 1 kg 300 g = ☐ cg

(4) 9 kg – 1300 g = ☐ dg

2 How many students of 30 kg each are equal to the weight of a car of 1.5 metric tons?

1.5 metric tons = ☐ × ☐ = ☐ kg

Number of students = ☐ ÷ ☐ = ☐

Volume measurement

What is the relation among the units of volume measurement?

Relation among different units of volume measurement

Large ↑

1 kilolitre (kL)	=	1000 L	
1 hectolitre (hL)	=	100 L	
1 decalitre (daL)	=	10 L	
1 Litre (L)	=	1 L	
1 decilitre (dL)	=	0.1 L	$= \frac{1}{10}$ L
1 centilitre (cL)	=	0.01 L	$= \frac{1}{100}$ L
1 millilitre (mL)	=	0.001 L	$= \frac{1}{1000}$ L

↓ Small

1 kilolitre = 10 hectolitres
1 hectolitre = 10 decalitres
1 decalitre = 10 Litres
1 Litre = 10 decilitres
1 decilitre = 10 centilitres
1 centilitre = 10 millilitres

1 Calculate and express in the given units.

(1) 3383 mL + 2649 mL = ☐ daL

(2) 21 L 540 mL + 12 L 625 mL = ☐ cL

(3) 756 L – 239.8 L = ☐ kL

(4) 425 cL – 12.5 cL = ☐ mL

1 Ayan went to the market with his father and on the way back from the market, his father filled the motorcycle with petrol. After coming home, Ayan saw that each product had its quantity written on its body in different units. So he made a list of them. Now, if Ayan expresses these quantities in the units given in the list, what will it be?



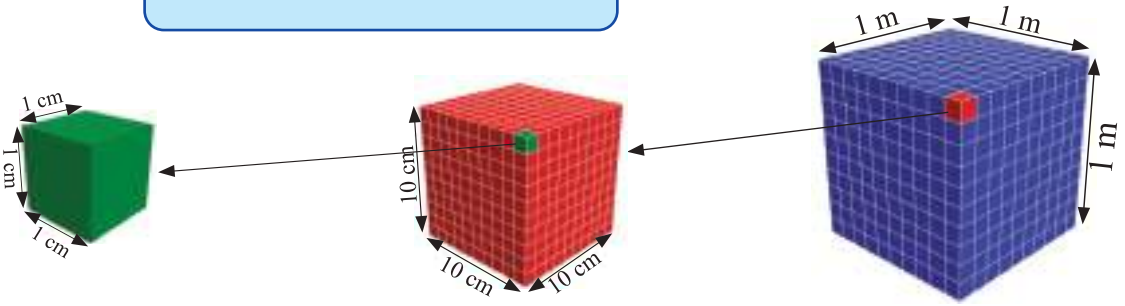
Product description	Quantity	Express in given units
A bottle of juice	1 Litre 500 mL	..... decalitres
1 bottle of soybean oil	5 Litres	..... millilitres
2 packets of liquid milk	500 mL + 500 mL	..... centilitres
1 bottle of coconut oil	750 mL	..... decilitres
1 bottle of mustard oil	2 Litres 500 mL	..... decalitres
1 bottle of whey	1 Litre 200 mL	..... millilitres
Petrol	12 Litres	..... hectolitres



We often see oil quantity written in cubic metres on big oil tanks. Is cubic metre a unit of volume measurement?

Yes, cubic metre is another unit of volume measurement.





1 cubic centimetre is equal to the volume of a cube of 1cm×1cm×1cm.
1 cubic cm = 1 mL

1000 cubic centimetres is equal to the volume of a cube of 10 cm × 10 cm × 10 cm. 1000 cubic cm = 1 Litre

1 cubic metre is equal to the volume of a cube of 1m × 1m × 1m.

Let us try

1. Fill in the following blank boxes.

4275 metres = ☐ km = ☐ hm = ☐ dam

5280 grams = ☐ hg = ☐ dag = ☐ kg

2500 mL = ☐ cL = ☐ dL = ☐ Litre

2. Nila has 60 decimetres of cloth. If it needs 200 cm of cloth to make 1 shirt, how many shirts will she make with the cloth she has?

60 decimetres of cloth = ☐ × ☐ = ☐ centimetres

Total shirts will be = ☐ ÷ ☐ = ☐ pieces.

3. Sathi's family consumes 3500 millilitres of soybean oil per month. So how many litres of oil does her family need per year?

3500 mL oil = ☐ ÷ ☐ = ☐ Litres

Oil consumption per year = ☐ ☐ ☐ = ☐ Litres

4. Ishrat's grandfather uses 375 kg 150 grams of organic fertilizer on his land every year. If the size of his land is 15 bighas, how many decagrams of fertilizer does he required per bigha?

375 kg = ☐ ☐ ☐ = ☐ decagrams

150 grams = ☐ ☐ ☐ = ☐ decagrams

Total fertilizer required on land = ☐ ☐ ☐ = ☐ decagrams

Fertilizer required per bigha = ☐ ☐ ☐ = ☐ decagrams

5. Fill in the blank boxes with > or < symbol.

(1) 50 L ☐ 5000 mL

(2) 6550 daL ☐ 2 kL

(3) 650 L ☐ 1 cubic m

Let us do

1 Put a tick mark (√) on the correct answer.

(1) What is the smallest unit of length measurement?

a) metre b) millimetre c) centimetre d) hectometre

(2) The length of a rectangular playground is 50 metres and the width is 30 metres. What is the total length of the other two sides in metres?

a) 20 b) 30 c) 50 d) 80

(3) On Arif's birthday, a cake weighing one kilogram was cut and distributed among 10 friends. How much cake did each friend get?

a) 100 decagrams b) 100 decigrams c) 10 decagrams d) 10 hectograms

2 Raju's height is 1.35 metres and his brother's height is 9.6 decimetres. What is the difference in height between them in centimetres?

3 A tailor has 375 decimetres of cloth. Now, if he wants to make 15 shirts with this cloth, how many centimetres of cloth can he use for each shirt?

4 Mahfuz bought 4.5 kg of rice, 8 hectograms of vegetables and 2400 grams of chicken from the market. How many kilograms did he buy in total?

5 8 people weigh 451.2 kg. So, how many hectograms will their average weight be?

6 There were 75 centilitres of mustard oil in a bottle. Shantar's mother used 170 millilitres of oil from there while cooking. So how many litres of oil are left in that bottle?

7 A shop sells 20 Litres of water bottles in 8 days. So how many decilitres of water are sold on average daily in that shop?

8 Russell bought a 250 mL packet of milk from the market. Now if he buys 40 more packets of milk, how many litres of milk will he get?

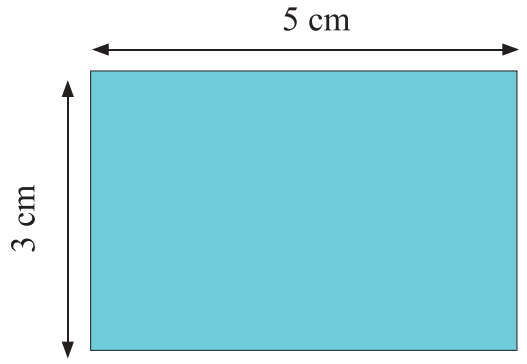
9 Mim walks 42 metres per minute and Mihir walks 80 centimetres per second. They both walk 3.6 kilometres per day.

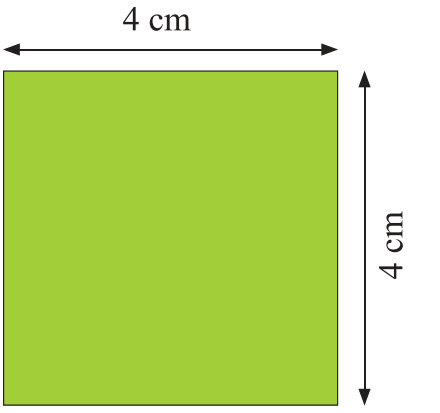
(a) How many minutes does Mim walk per day?

(b) How many minutes does Mihir walk per day?

Area of rectangles and squares

There is a rectangle and a square below. How much larger is one than the other?





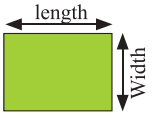


How many 1 square cm are there in each figure?

Do you recall how we find area?

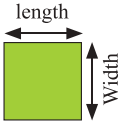


Area of a rectangle
= Length × Width



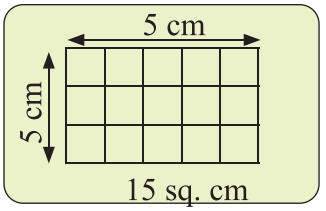
Since all squares are rectangles

Area of a square
= Length × Width
= Length × Length





So let us do the calculation.

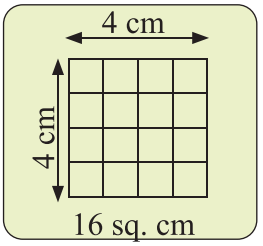


The area of the rectangle is: 5 cm × 3 cm
= (5 × 3) sq. cm = 15 sq. cm

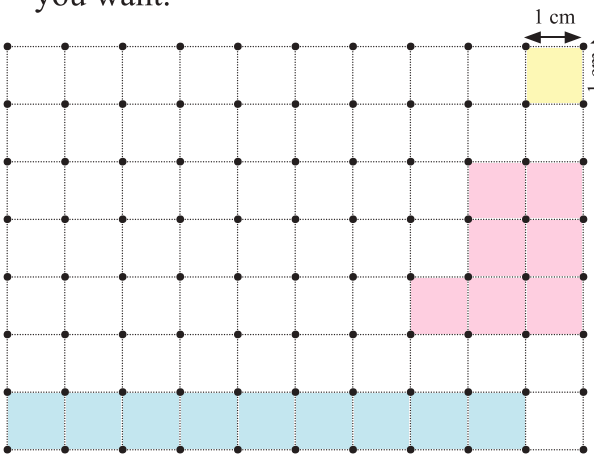
The area of the square is: 4 cm × 4 cm = 16 sq. cm

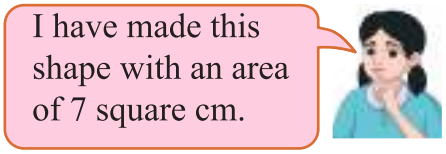
Difference of area: 16 – 15 = 1 sq. cm

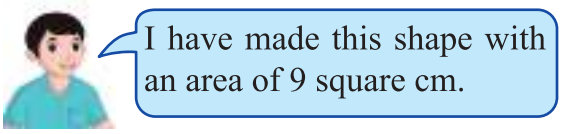
Therefore, the square is 1 sq. cm larger than the rectangle.



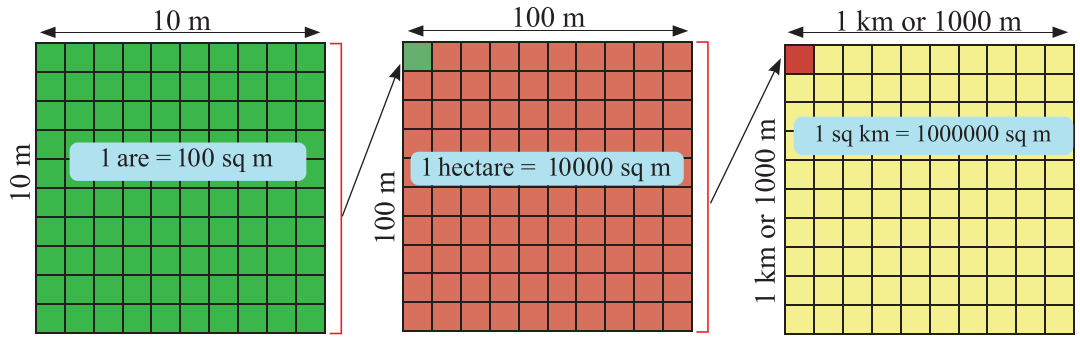
1 Using the dot paper below let us create the shape with an area of 7 square centimetres. Discuss with your classmates and create any other shapes you want.







There are some other units to measure larger areas



'1 are' is 100 square metres. It is equal to the area of a square with side of 10 metres.

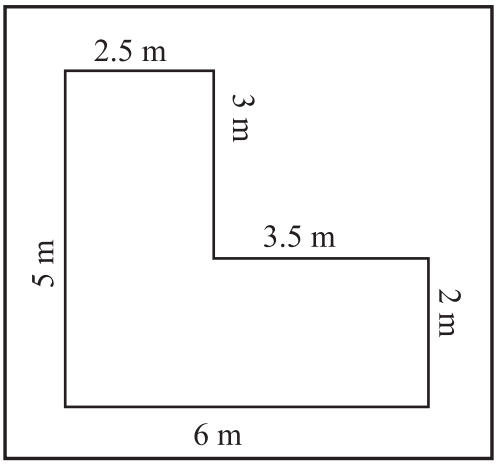
'1 hectare' is 10000 square m. It is equal to the area of a square with side of 100 metres.

'1 square km' is 1000000 square m. That is, it is equal to the area of a square with sides of 1 km or 1000 metres.

1 Fill in the blank boxes.

(1) 1 hectare = ☐ are (2) 1 sq km = ☐ hectare

2 How many square metres is the area of the L-shaped figure on the right? How can this be calculated? Let us discuss in groups with our classmates.



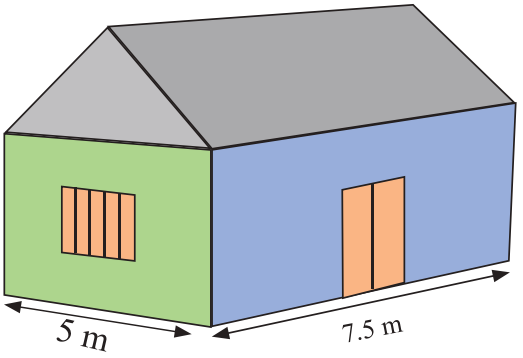


Can we use the formula for the area of a rectangle to find its area?



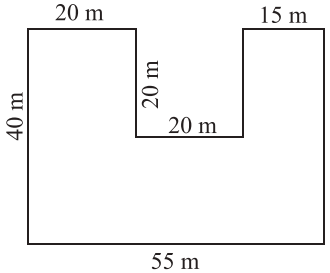
Of course, but there are various ways to find the area here.

1 Find the area of the floor of Rafi's room.

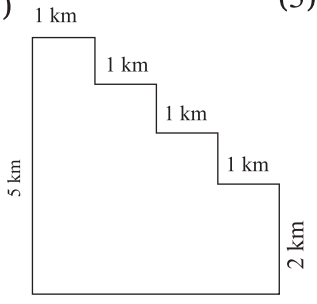


3 Let us find some more areas.

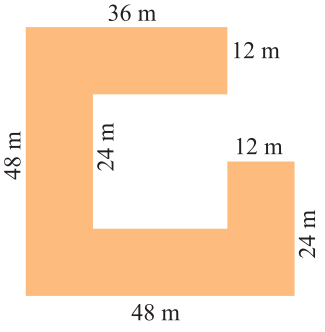
(1)



(2)



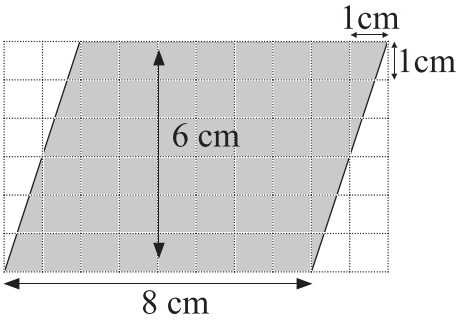
(3)



2026

Area of parallelograms

Let us think of a way to find the area of a parallelogram with a base of 8 cm and a height of 6 cm.

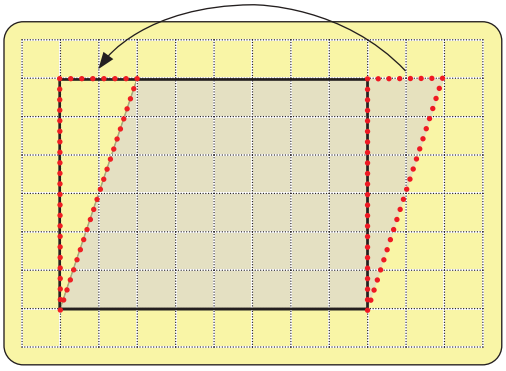




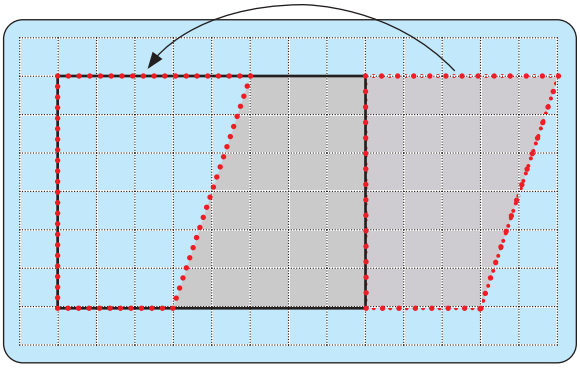
There are many ways to find the area of a parallelogram using the formula for a rectangular area.

If we cut off one side of a parallelogram and join it to the other side, we get a rectangle with the same base and height.





Rafi's thought



Tuli's thought

1. Area of parallelogram according to Rafi's method

$\square \times \square = \square$ sq. cm

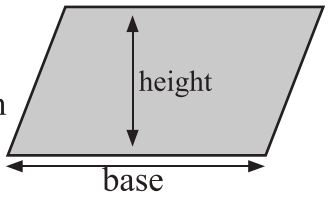
2. Area of parallelogram according to Tuli's method

$\square \times \square = \square$ sq. cm

What can we conclude from the results of (1) and (2)?

Here, if we consider the length as the base and the width as the height,

Area of a parallelogram
= base × height

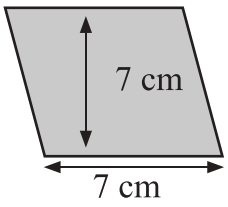


This formula is similar to the formula for finding the area of a rectangle.



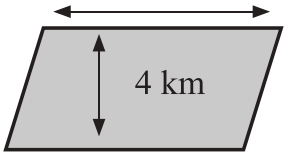
1 Find the area of the following parallelograms.

(1)



Area
= ☐ cm × ☐ cm
= ☐ cm²

(2)



Area
= ☐ km × ☐ km
= ☐ km²

1 Find the area of the following parallelograms.

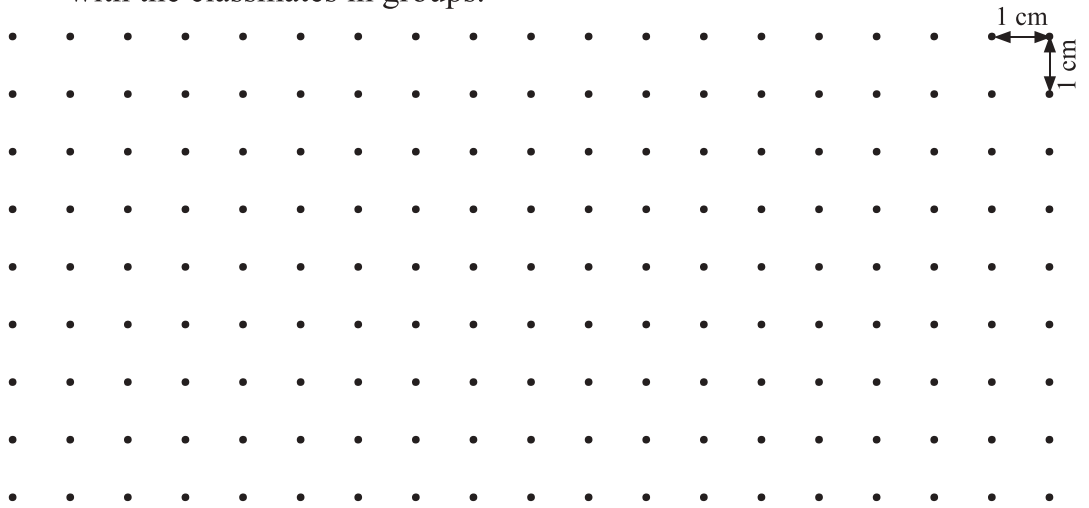
(1) base = 7 cm, height = 6 cm

(2) base = 4 cm, height = 12 cm

(3) base = 4 m, height = 6 m

(4) base = 3.5 km, height = 4 km

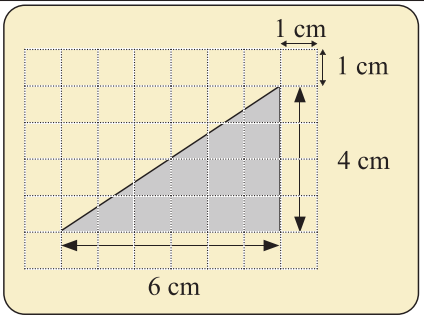
2 Draw parallelograms of area 12 sq. cm on the dot paper below and discuss with the classmates in groups.



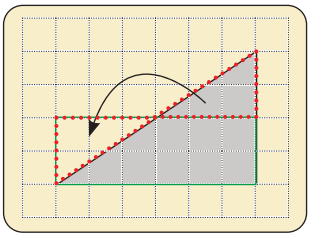
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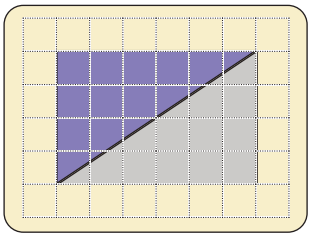
Area of triangles

What is the area of a right-angled triangle with a base of 6 cm and a height of 4 cm?



Let us think about how to apply the formula for finding the area of a triangle.







I cut the top half of the height of the triangle and placed it on the side to make the rectangle.

I made a rectangle by placing another triangle of the same shape.



1 Discuss in groups with classmates.

(1) If we follow Tuli's way, the area of this triangle will be

□ × □ = □ cm^2

(2) If we follow Rafi's way, the area of this triangle will be

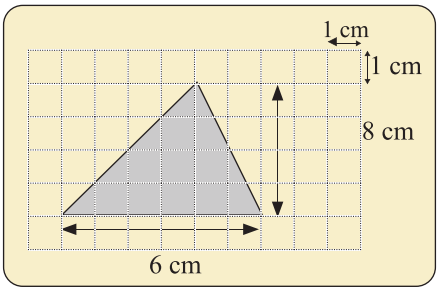
□ × □ ÷ 2 = □ cm^2

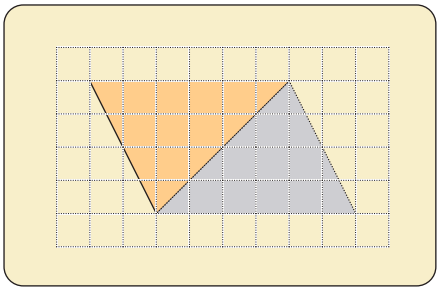


So, it is clear that the area of the triangle is half the area of the rectangle. But what about acute-angled and obtuse-angled triangles?



Let us see how to find the area of an acute-angle and an obtuse-angle triangle.





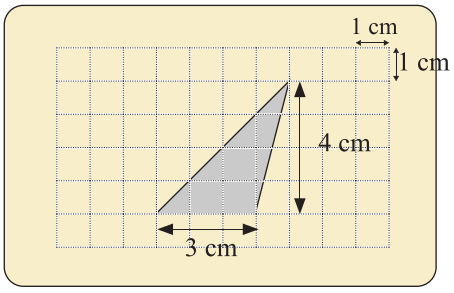


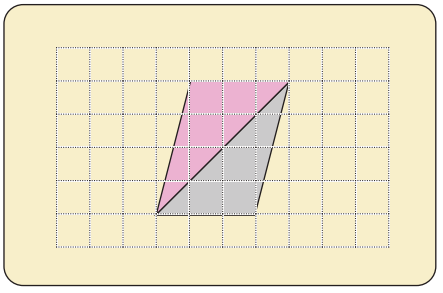
I made a parallelogram by placing another acute-angled triangle of the same shape.

The area of the triangle

= ☐ × ☐ ÷ 2

= ☐ cm^2





I made a parallelogram by placing another obtuse-angled triangle of the same shape.



The area of the triangle

= ☐ × ☐ ÷ 2

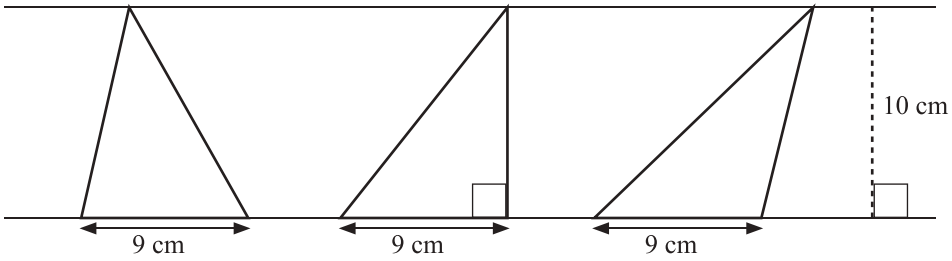
= ☐ cm^2



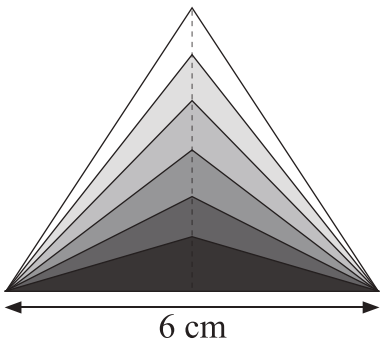
So, the area of the triangle is half the area of a parallelogram with the same base and height.

Area of a triangle = (base × height) ÷ 2

1 Find and compare the areas of 3 triangles drawn between two parallel lines at a distance of 10 cm. Discuss in groups with classmates.



2 The base of a triangle is 6 cm. If its height is gradually increased from 1 cm to 6 cm, then how will its area increase?



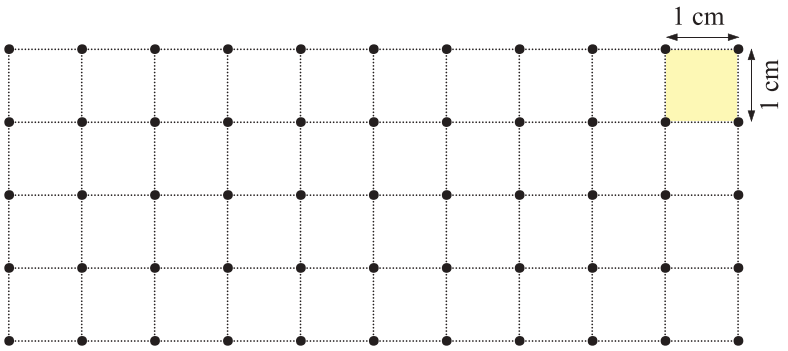
height (cm)	1	2	3	4	5	6
Area (square cm)						

1 Find the area of the following triangles.

(1) base = 5 cm, height = 4 cm (2) base = 6 cm, height = 8 cm

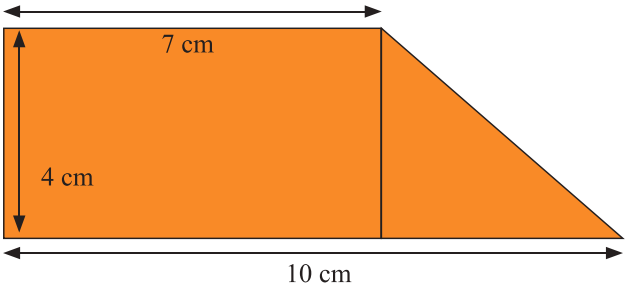
(3) base = 5 cm, height = 5 cm (4) base = 2 cm, height = 2.5 cm

3 Draw a triangle with an area of 6 sq cm on the grid paper below.



Let us try

1. Find the area of the following shape.



The length of the rectangle = ☐ , Width = ☐

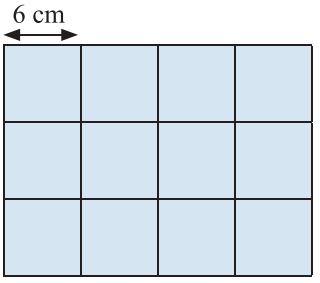
Area of the rectangle = ☐ × ☐ = ☐

Base of the triangle = ☐ − ☐ = ☐

Area of the triangle = ☐ × ☐ ÷ ☐ = ☐

Total area of the shape = ☐ + ☐ = ☐

2. What is the area of the field shown on the side?



Area of 1 square = ☐ × ☐ = ☐

Total squares in the field = ☐

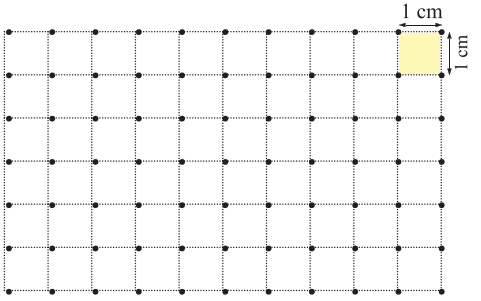
Area of the field = ☐ × ☐ = ☐

3. Draw the following shapes on grid paper.

(1) A triangle whose area is 9 sq cm

(2) A rectangle whose area is 8 sq cm

(3) A parallelogram whose area is 6 sq cm



Let us do

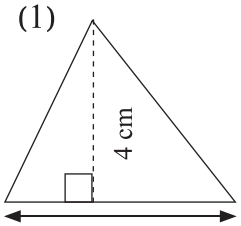
1 Put the correct words in the blank boxes.

(1) Area of a parallelogram = ☐ × ☐

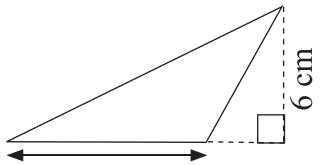
(2) Area of a triangle = ☐ × ☐ ÷ 2

2 Find the area of the following figures.

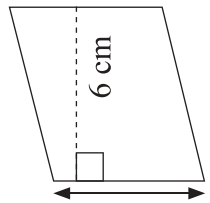
(1)



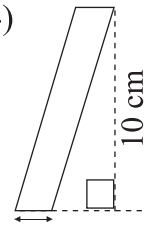
(2)



(3)



(4)



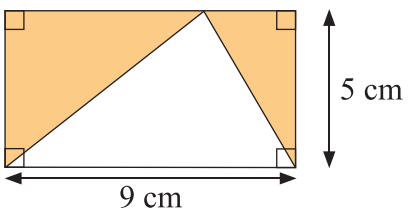
3 The width of a rectangular piece of land is 85 metres and the length is 105 metres. What is the area of the land?

4 The width of a square house is 55 metres and its area is 3025 square metres. How many metres is the length of the house?

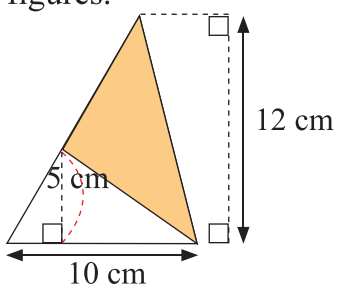
5 If the height of a triangular design is 0.8 m and its area is 1.2 sq m, what is its area in metres?

6 Find the area of the coloured part of the following figures.

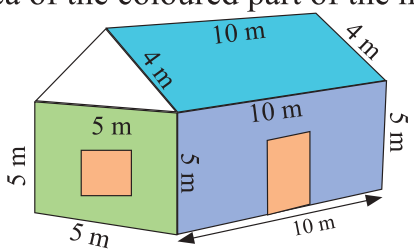
(1)



(2)



7 Find the total area of the coloured part of the house in the figure below.



Conversion of time

Sadika went to her village home with her parents and stayed there for 1 month, 2 weeks and 4 days. So, how many seconds did she stay in her village home in total?



How can we convert it into seconds?

We can solve this using the concepts from the previous class.

1 minute = 60 sec

1 hour = 60 minute = 60 × 60 sec = 3600 sec

1 day = 24 hour = 24 × 3600 sec = 86400 sec

1 week = 1 day = 7 × 86400 sec = 604800 sec

Here, the shortest period of total elapsed time, i.e. 1 month, 2 weeks, 4 days, is 1 day. So, let us first convert the whole time into days.

Let 1 month = 30 days. 2 weeks = 2 × 7 = 14 days 4 days = 4 days

Sadika stayed in her village home for a total of 48 days.

We already know that 1 day = 24 hours, then 48 days = 48 × 24 = 1152 hours.

Also, 1 hour = 60 minutes, then 1152 hours = 1152 × 60 = 69120 minutes.

Now, 1 minute = 60 seconds, then 69120 minutes = 69120 × 60 = 4147200 seconds.

So Sadika stayed in her village home for a total of 4147200 seconds.



What will it be if 1 year is converted into hours, minutes, and seconds?

We can solve this problem in the same way as before.



1 year = 365 days

365 × 24 hours = 8760 hours

8760 × 60 minutes = 525600 minutes

525600 × 60 seconds = 31536000 seconds

1 Solve the following problems.
(Let 1 month = 30 days)

(a) 2 years 5 months = ☐ × ☐ days + ☐ × ☐ days = ☐ days

(b) 15 years 7 months = ☐ × ☐ days + ☐ × ☐ days = ☐ days

= ☐ × ☐ hours = ☐ hours

1 Asma went to the park with her father on Friday. They walked in the park for 12780 seconds.
(a) How many minutes did Asma walk with her father in the park?
(b) How many hours and how many minutes did Asma walk with her father in the park?



2 Rubel visited his great uncle's house during summer vacation and stayed there for a total of 12960 minutes. How many days did he stay there?

3 Mainul is 3 years 2 months 5 days younger than his elder sister.
(a) How many days is Mainul younger than his sister?
(b) How many hours is Mainul younger than his sister?

Bangla and English Calendar

When is your birthday? Tell your friends on what date of what Bangla year you were born.



My birthday is 16 Shrabon, Bangla year 1419. Shrabon month is the fourth month of the Bangla calendar. When is your birthday?

My birthday is 28 Paush, Bangla year 1419. Well, how many days are there in your and my birth months?



1 Look at the number of days in the 12 Bengali months in the table below and find the answers to the following questions in groups.

(1) How many days are there in a year in the Bangla calendar? ☐

(2) How many months have 30 days? ☐

(3) How many months have 31 days? ☐

(4) How many days are there in Autumn? ☐

(5) How many days are there in Summer? ☐

(6) How many days are there in Late Autuam? ☐

(7) Which month has 29 days? ☐

Season	Name of the month	Number of days
Summer	Baishakh	31 days
	Jaisthya	31 days
Rainy Season	Ashar	31 days
	Shrabon	31 days
Autumn	Bhadra	31 days
	Ashwin	31 days
Late Autumn	Kartik	30 days
	Agrahyon	30 days
Winter	Paush	30 days
	Magh	30 days
Spring	Falgun	29 days
	Chaitra	30 days



When there is a leap year in the Christian year, in the Bengali year the month of Falgun should be counted as 30 days.

2 Look at the table below to see the number of days in the English 12 months and find the answers to the questions.

(1) How many days are there in a year in the English calendar? ☐

(2) How many months have 30 days? ☐

(3) How many months have 31 days? ☐

(4) In which month did our country win the victory, and how many days are there in that month? ☐ , ☐

(5) In which month is our Language Martyr Day, and how many days are there in that month? ☐ , ☐

Name of the month	Number of days
January	31 days
February	28 days
March	31 days
April	30 days
May	31 days
June	30 days
July	31 days
August	31 days
September	30 days
October	31 days
November	30 days
December	31 days



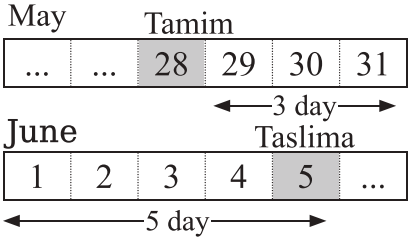
When the English year is a leap year, the month of February has to be counted as 29 days.

3 Tamim's birthday is 28th May. If Taslima's birthday is 8 days after Tamim's birthday, on what date is Taslima's birthday?

Let us see Rafi and Tuli's ideas separately to solve this.

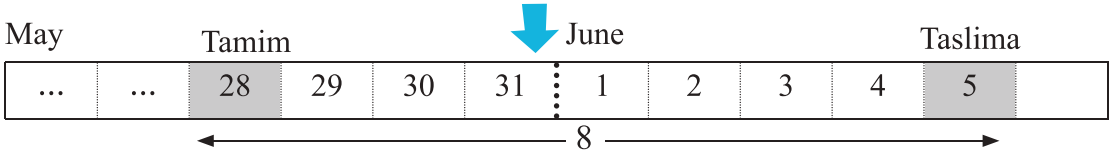
Rafi's idea

May will end 3 days after Tamim's birthday, and then June will start. Since, 8 – 3 = 5. Therefore, Taslima's birthday will be 5th June.



Tuli's idea

Add days: 28 + 8 = 36. Since May has 31 days, Taslim's birthday will be 36 – 31 = 5th June.



Mary was born on 25 February 2009. What is her age on 25/06/2024?



I think if we subtract the date of birth from 26/06/2024, we will get her age.

No, subtraction is not enough. We need to include her birthday as well so extra 1 day should be added. Of course, the day month and year will be considered as well.



Year	Month	Day
2024	06	26
2009	02	25
15	04	01^{+1}

Mary's age is 15 years 04 months 02 days

1 Michel was born on 25 May 2013. On which date will his age be 10 years 03 months 09 days?



This problem is different from the previous one.

We can easily solve this by adding the mentioned time with the date of birth.



Year	Month	Day
2013	05	25
10	03	09
2023	09	04

Your addition is correct. Since August has 31 days, one more day will be added to the month's total. That is, 1 must be subtracted from the calculation of the day.





Then the correct date will be ☐ / ☐ / ☐

2026

1 Our liberation war was started on March 26, 1971. We achieved victory on 16 December 1971. So, how long did the liberation war continue?

Year	Month	Day
1971	12	16
1971	03	26

2 Noori and Mehdi are two siblings. Noori's age is 13 years 5 months and Mehdi's age is 8 years 8 months. What is their age difference?



Since here we are looking for differences, the mathematical process will be .....

At first, we subtract smaller units and progressively larger units, just like whole number calculations.



Year	Month
13^{12}	5^{+12}
8	8
	9

[Month]
We cannot subtract 5 – 8. So, we bring 1 year (= 12 months) to the month's column and subtract 8 months from (5 + 12) = 17 months.
17 – 8 = 9

Year	Month
13^{12}	5
8	8
☐	9

[Year] 12 – 8 = 4

Age difference is ☐ Year ☐ Month

3 Neela's elder brother is 2 years 8 months older, and her younger sister is 1 year 9 months younger than her. If Neela's age is 9 years and 7 months, what is the age of her elder brother and younger sister?



Let's calculate Neela's elder brother's age.

Neela's age		years		months
Neela's elder brother		years		months
Age of Neela's elder brother is		years		months



Now let's find out the age of Neela's younger sister.

		(8)		+	
Neela's age	~~9~~	years	7		months
Neela's younger sister	1	years	9		months younger
Age of Neela's younger sister		years			months

2 Here is Sadik's monthly routine for March in the English calendar of 2025.

- Red coloured days are holidays
- On green coloured days, he goes to poetry recitation class.
- On yellow coloured days, he attends classes at the art school.
- On white coloured days, he goes to school.

Answer to the following questions.

(1) How many days did Sadiq have school holidays in March?

(2) How many days did he go to school and write those dates.

(3) How many days did he go to music class?

March ফাল্গুন-চৈত্র

Sat	Sun	Mon	Tue	Wed	Thu	Fri
1 ১৬	2 ১৭	3 ১৮	4 ১৯	5 ২০	6 ২১	7 ২২
8 ২৩	9 ২৪	10 ২৫	11 ২৬	12 ২৭	13 ২৮	14 ২৯
15 ১	16 ২	17 ৩	18 ৪	19 ৫	20 ৬	21 ৭
22 ৮	23 ৯	24 ১০	25 ১১	26 ১২	27 ১৩	28 ১৪
29 ১৫	30 ১৬	31 ১৭				

2026

24-hour Clock

How do we express a 12-hour clock into a 24-hour clock?

In the 24-hour clock, the 24 hours from 12 at night to 12 at night of the next day are considered as 1 day, which is divided into 24 hours.

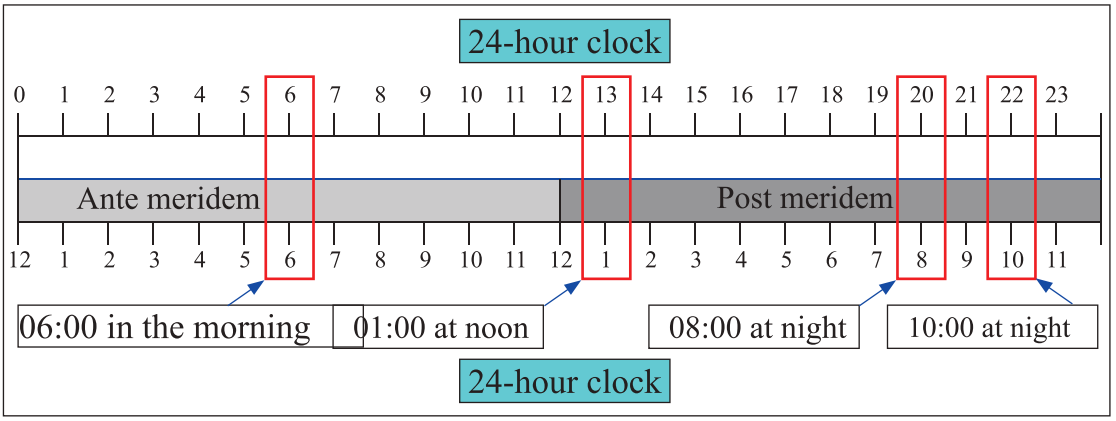


Every day I wake up at 6:00 in the morning and go to sleep at 10:00 at night.

Yesterday I had lunch at 1:00 and dinner at 8:00.



Let us convert Rafi and Tuli's schedule of 12-hour clock into 24-hour clock.



The schedule of Rafi and Tuli

12-hour clock	24-hour clock
06:00 in the morning	06:00
01:00 at noon	13:00
08:00 at night	20:00
10:00 at night	22:00



- No 'am (ante meridiem)' and 'pm (post meridiem)' are used in 24-hour clocks.
- The hour starts at zero and goes up to 23.
- To write all 24-hour clock times, hours and minutes are expressed as 2 digits and ":" (colon) is used between hours and minutes.

1 Express the time written in the following 12-hour clock in a 24-hour clock.

(1) 1:27 pm = ☐ (2) 7:41 pm = ☐

(3) 5:16 am = ☐ (4) 12:24 pm = ☐

(5) 11:26 pm = ☐ (6) 12:31 am = ☐

2 Express the time written in the following 24-hour clock in a 12-hour clock.

(1) 13:47 = ☐ (4) 17:52 = ☐ (7) 3:38 = ☐

(2) 12:26 = ☐ (5) 23:29 = ☐ (8) 07:54 = ☐

(3) 00:56 = ☐ (6) 19:07 = ☐ (9) 16:43 = ☐

1 Express timing of the following daily activities in 12-hour clock and 24-hour clock.

	12-hour clock	24-hour clock
Wake-up time	☐	☐
Time to go to school	☐	☐
Tiffin time	☐	☐
Time to return from school	☐	☐
Time to go to bed	☐	☐

3 Answer the questions by looking at the train schedule below:



Train Time Table: Dhaka – Chattogram

Station	704 Mahanagar	4 Karnophuli Express	702 Subarno Express
Mahanagar	4	05:30	16:30
Karnophuli Express	702	06:25	17:05
Subarno Express		07:47	
Departure from Dhaka	07.40	05:30	16:30
Departure from Dhaka Airport	08:21	06:25	17:05
Departure from Tongi	⇓	07:47	⇓
Departure from Ghorashal	⇓	08:28	⇓
Departure from Narsingdi	⇓	08:50	⇓
Departure from Bhiarab	10:17	10:45	⇓
Departure from Ashugaanj	⇓	11:00	⇓
Departure from Brahmanbaria	10:50	11:29	⇓
Departure from Akhaura	⇓	12:15	⇓
Departure from Cumilla	12:11	13:50	⇓
Departure from Laksam	⇓	14:45	⇓
Departure from Hasanpur	⇓	15:23	⇓
Departure from Feni	13:22	16:06	⇓
Arrival in Chattogram	15:15	18:40	22:35

(1) When does Mahanagar leave Brahmanbaria?

(2) Express in 12-hour clock when Karnaphuli Express reaches Chattogram.

(3) Which train should be used to reach Chattogram from Dhaka in the shortest time? Present the reason in favour of the answer.

Leap Year, Decade, Era and Century



We know that February has 28 days. But look, in the 2024 calendar, February has 29 days. Why is this happening? Is there something wrong with the calendar?

February-2024

Sat	Sun	Mon	Tue	Wed	Thu	Fri
27 ১৩	28 ১৪	29 ১৫	30 ১৬	31 ১৭	1 ১৮	2 ১৯
3 ২০	4 ২১	5 ২২	6 ২৩	7 ২৪	8 ২৫	9 ২৬
10 ২৭	11 ২৮	12 ২৯	13 ৩০	14 ১	15 ২	16 ৩
17 ৪	18 ৫	19 ৬	20 ৭	21 ৮	22 ৯	23 ১০
24 ১১	25 ১২	26 ১৩	27 ১৪	28 ১৫	29 ১৬	



No, the calendar is not wrong. In fact, the year 2024 is a leap year.



A leap year is a year that has an extra day to adjust the seasonal year with the calendar year. A leap year is usually divisible by 4. However, not all years divisible by 4 are leap years. If a year is divisible by 100, it is not a leap year. But if it is divisible by 400, then it is a leap year.



The English years 2008, 2012, and 2016 were also leap years.

A leap year comes once every 4 years. Therefore, the year 2028 will also be a leap year.



2 Let us find out whether the years 1800, 1900, and 2000 were leap years or not.

$400\overline{)1800}$ 4, 1600, 200

→ Not a leap year

$400\overline{)1900}$

→

$400\overline{)2000}$

→

In leap years, there are 29 days in February, which is 1 day more than 28 days in other years. And so the total number of days in that year is 366.

2 Fill in the table below.

Year	Leap Year/Not Leap Year	How many days were there in February?
2100		
1984		
1820		
1756		
1971		

Ways to calculate years

- A period of 10 consecutive years is 1 decade
- A period of 12 consecutive years is 1 era
- A period of 100 consecutive years is 1 century
- That means, the decade of the 70s refers to the period from 71 to 80. Since our great liberation war took place in 1971, that period is referred to as the decade of the seventies.

The 1st century began in the year 1, which was more than 2000 years ago. We are now in the 21st century, which began in the year 2001.

3 1600 and 1701 were in which centuries?



1 Each of the following years is of which century?

(1) 1945 (2) 1300 (3) 1899 (4) 1756

Let us try

1. What is a period of 100 consecutive years called? ☐

2. 8:15 pm on the clock. What is the time in a 24-hour clock? ☐

3. How many days are there in a year in the Bengali calendar? ☐

4. Arian turned 10 years old on March 23, 2017. That night at 10:45 pm, he cut the birthday cake with everyone. Now let us find the answers to the following questions.

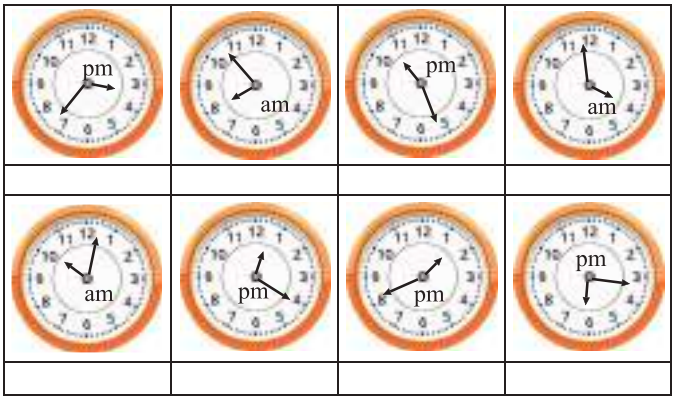
   (1) Is 2017 a leap year? ☐

   (2) What is Aryan's birth year? ☐

   (3) How many days was February in that year? ☐

   (4) In which century is Aryan's birth year? ☐

5. Express the times indicated on the clocks on a 24-hour clock.



6. Our language movement was started on February 21, 1952. We achieved victory through the Liberation War on December 16, 1971. Find the duration from language movement to achieving victory.

year	month	day

7. Look at the English 2025 calendar and find the answers to the following questions.

2025 AD ১৪৩০—১৪৩১ বঙ্গাব্দ

January পৌষ-মাঘ

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				1 ১৭	2 ১৮	3 ১৯
4 ২০	5 ২১	6 ২২	7 ২৩	8 ২৪	9 ২৫	10 ২৬
11 ২৭	12 ২৮	13 ২৯	14 ৩০	15 ১	16 ২	17 ৩
18 ৪	19 ৫	20 ৬	21 ৭	22 ৮	23 ৯	24 ১০
25 ১১	26 ১২	27 ১৩	28 ১৪	29 ১৫	30 ১৬	31 ১৭

February মাঘ-ফাল্গুন

Sat	Sun	Mon	Tue	Wed	Thu	Fri
1 ১৮	2 ১৯	3 ২০	4 ২১	5 ২২	6 ২৩	7 ২৪
8 ২৫	9 ২৬	10 ২৭	11 ২৮	12 ২৯	13 ৩০	14 ১
15 ২	16 ৩	17 ৪	18 ৫	19 ৬	20 ৭	21 ৮
22 ৯	23 ১০	24 ১১	25 ১২	26 ১৩	27 ১৪	28 ১৫

March ফাল্গুন-চৈত্র

Sat	Sun	Mon	Tue	Wed	Thu	Fri
1 ১৬	2 ১৭	3 ১৮	4 ১৯	5 ২০	6 ২১	7 ২২
8 ২৩	9 ২৪	10 ২৫	11 ২৬	12 ২৭	13 ২৮	14 ২৯
15 ১	16 ২	17 ৩	18 ৪	19 ৫	20 ৬	21 ৭
22 ৮	23 ৯	24 ১০	25 ১১	26 ১২	27 ১৩	28 ১৪
29 ১৫	30 ১৬	31 ১৭				

April চৈত্র-বৈশাখ

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			1 ১৮	2 ১৯	3 ২০	4 ২১
5 ২২	6 ২৩	7 ২৪	8 ২৫	9 ২৬	10 ২৭	11 ২৮
12 ২৯	13 ৩০	14 ১	15 ২	16 ৩	17 ৪	18 ৫
19 ৬	20 ৭	21 ৮	22 ৯	23 ১০	24 ১১	25 ১২
26 ১৩	27 ১৪	28 ১৫	29 ১৬	30 ১৭		
31 ১৭						

May বৈশাখ-জৈষ্ঠ্য

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					1 ১৮	2 ১৯
3 ২০	4 ২১	5 ২২	6 ২৩	7 ২৪	8 ২৫	9 ২৬
10 ২৭	11 ২৮	12 ২৯	13 ৩০	14 ৩১	15 ১	16 ২
17 ৩	18 ৪	19 ৫	20 ৬	21 ৭	22 ৮	23 ৯
24 ১০	25 ১১	26 ১২	27 ১৩	28 ১৪	29 ১৫	30 ১৬
31 ১৭						

June জৈষ্ঠ্য-আষাঢ়

Sat	Sun	Mon	Tue	Wed	Thu	Fri
	1 ১৮	2 ১৯	3 ২০	4 ২১	5 ২২	6 ২৩
7 ২৪	8 ২৫	9 ২৬	10 ২৭	11 ২৮	12 ২৯	13 ৩০
14 ৩১	15 ১	16 ২	17 ৩	18 ৪	19 ৫	20 ৬
21 ৭	22 ৮	23 ৯	24 ১০	25 ১১	26 ১২	27 ১৩
28 ১৪	29 ১৫	30 ১৬				

(1) The second Saturday of March in the Bengali calendar is ☐

(2) The date of Bengali New Year in the English Calendar is ☐

(3) What day will be after 35 days of 3rd April, Thursday? ☐

(4) What day will be after 22 days of 15th February, Saturday? ☐

(5) What day was before 50 days of April 1st, Tuesday? ☐

2026

Let us do

1 Put a tick mark (√) on the correct answer.

(1) How many minutes in 5 days?

a) 120 b) 720 c) 3600 d) 7200

(2) Fariha was absent from school from the 22nd of Shrabon to the 3rd of Bhadra because of waterlogging in front of her house. How many days was she absent?

a) 11 b) 12 c) 13 d) 14

2 Write the number of days of the following months.

(1) Shrabon (2) Bhadra (3) Agrahayon (4) Chaitra
(5) April (6) July (7) August (8) December

3 Find the answers to the following questions.

(a) If 1st August is Thursday, then what day of the week will it be on June 5?

(b) If 1st October is Saturday, then what day of the week will it be on 31st October?

4 Find the number of days in February in the following years.

(1) 1200 (2) 1692 (3) 2010

5 The year 2028 is a leap year. If January 1, 2028 is a Saturday, let us find out what day December 31, 2028 will be.

6 Write the century of the following years.

(1) 108 (2) 1015 (3) 2001

7 Find answers to the following questions. (Let, 1 month = 30 days)

(a) Express 10 years in days.

(b) Express 1000 hours in months, days and hours.

8 A train leaves Dhaka at 10:50 and reaches Rajshahi at 16:25.

(a) How many hours and minutes does the train take to reach Rajshahi from Dhaka?

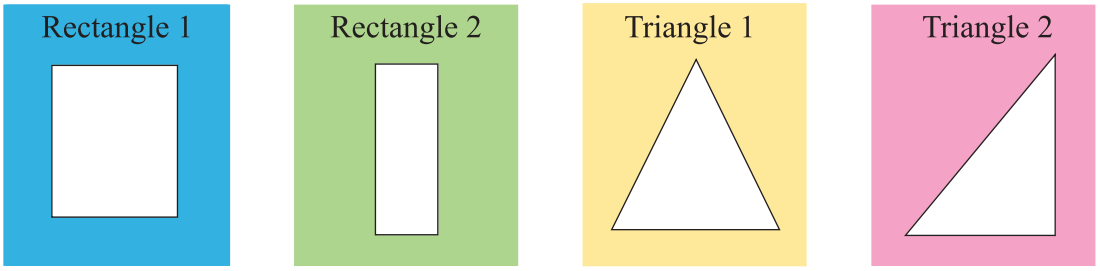
(b) How many seconds does the train take to reach Rajshahi from Dhaka?

Chapter 9

Geometry

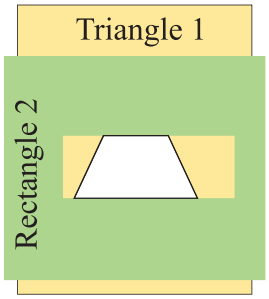
Trapezium and parallelogram

How many types of quadrilaterals can we make by placing the following rectangular and triangular frames on top of each other?

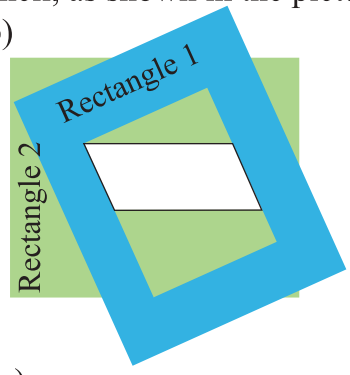


1 Let us put any two frames on top of each other and draw different types of quadrilaterals with a pencil, as shown in the picture.

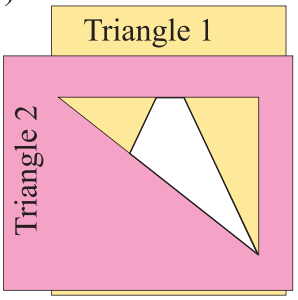
a)



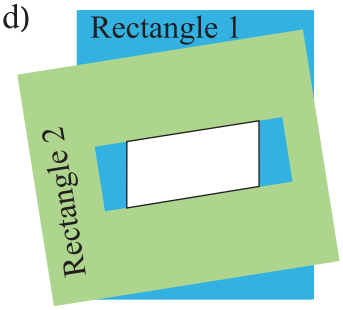
b)



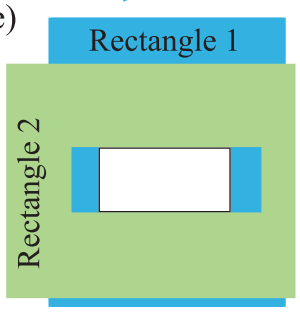
c)



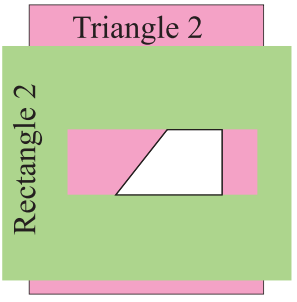
d)



e)



f)





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Arrange the mentioned quadrilaterals into two groups based on their parallel sides.

Number of parallel sides	Quadrilateral
(1) Only one pair of sides is parallel to each other	a, ---
(2) Two pairs of sides are parallel to each other	----

2 Is there any rectangle in the above 6 quadrilaterals? If there is, then explain why it is a rectangle.



We have learned about squares and rectangles in class four. Which one of the above quadrilaterals is a rectangle?

The opposite sides of quadrilateral 'e' are equal and parallel to each other. Also, its every angle is a right angle. So the quadrilateral 'e' is a rectangle.





Here, some quadrilaterals have one pair of parallel sides and some quadrilaterals have two pairs of parallel sides.

One pair of sides of a quadrilateral is parallel to each other	Two pairs of sides of a quadrilateral are parallel to each other
a f	e d b
Trapezium	Parallelogram
Trapezium	

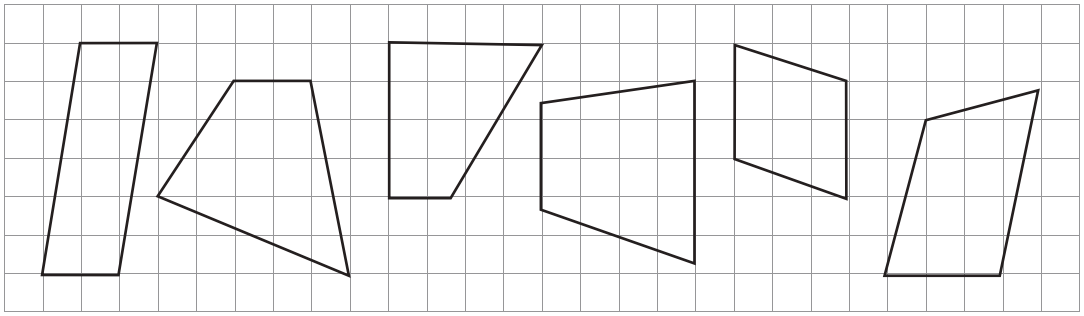


A trapezium has one pair of sides parallel to each other, and a parallelogram has two pairs of sides parallel to each other.

All parallelograms are trapeziums.



2 Find the trapezium and parallelogram from the following figures and explain the reason.



(a) (b) (c) (d) (e) (f)

3 Measure the length of the sides and the angles of the following parallelograms. Do we find any properties of the sides and the angles of the parallelograms?



(1) Length of opposite sides

(2) Opposite angles

In a parallelogram
- Opposite sides are equal to each other.
- Opposite angles are equal to each other.

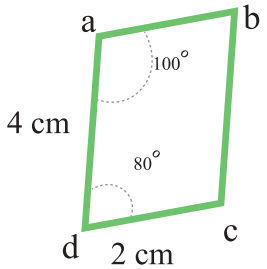
2 Find the length of the sides and measure the angles of the following parallelograms.

(1) ab = ---------- cm

(2) bc = ----------cm

(3) ∠b = -------°

(4) ∠c = -------°



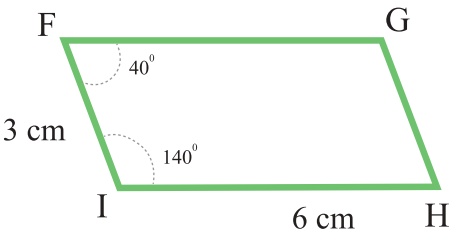
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(5) FG = ---------- cm

(6) GH = ---------- cm

(7) ∠G = --------^{0}

(8) ∠H = --------^{0}



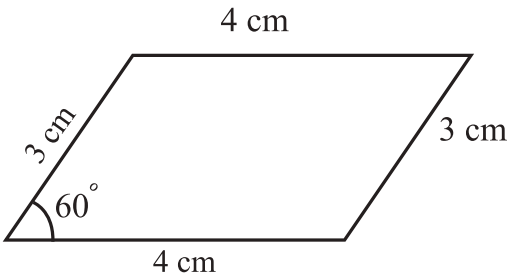
4 Let us draw a parallelogram like the one below in our notebook.

How to draw a parallelogram

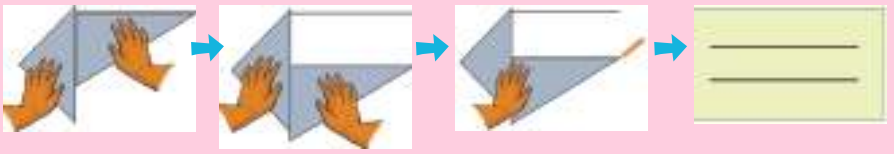
[1] Using a ruler, draw a line of 4 cm length.

[2] Using a protractor, draw an angle of 60^0.

[3] Using the Set Square, draw a line parallel to the line drawn in step 2.



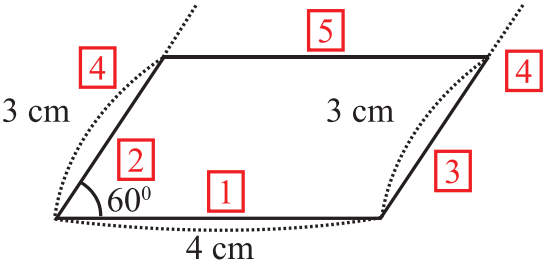
We can draw parallel lines by using Set Squares like this.





[4] Measure 3 cm on the lines drawn in step 2 and step 3.

[5] Using a ruler, draw a line which connects the two points measured in step 4.



3 Draw the following parallelograms.

(1) Length 4 cm, width 2.5 cm and an angle of 55^0

(2) Length 5 cm, width 3 cm and an angle of 70^0

(3) Each side has length 4 cm and an angle of 35^0

5 Let us find out and draw if there is any trapezium in the picture.



Here we can see several trapeziums.



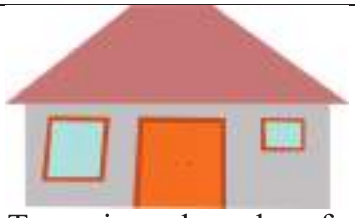


The roof of the house here is also trapezium-shaped.

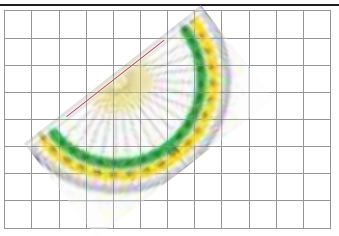
How can we draw it with a protractor and a pencil?

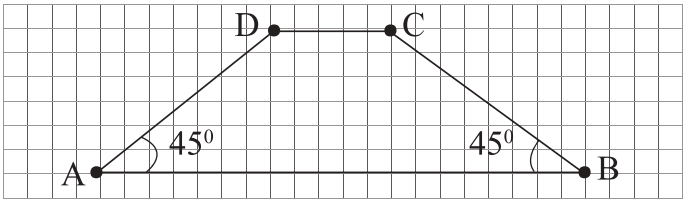


- Draw a line AB (base) on grid paper or white paper. Using a protractor, draw 45-degree angles on both sides of the line.
- Now draw the CD line parallel to the AB line. Then a trapezium ABCD is drawn.

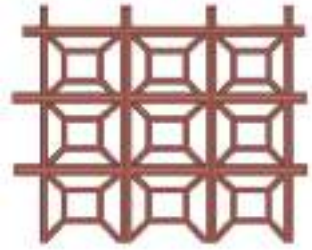


Trapezium-shaped roof





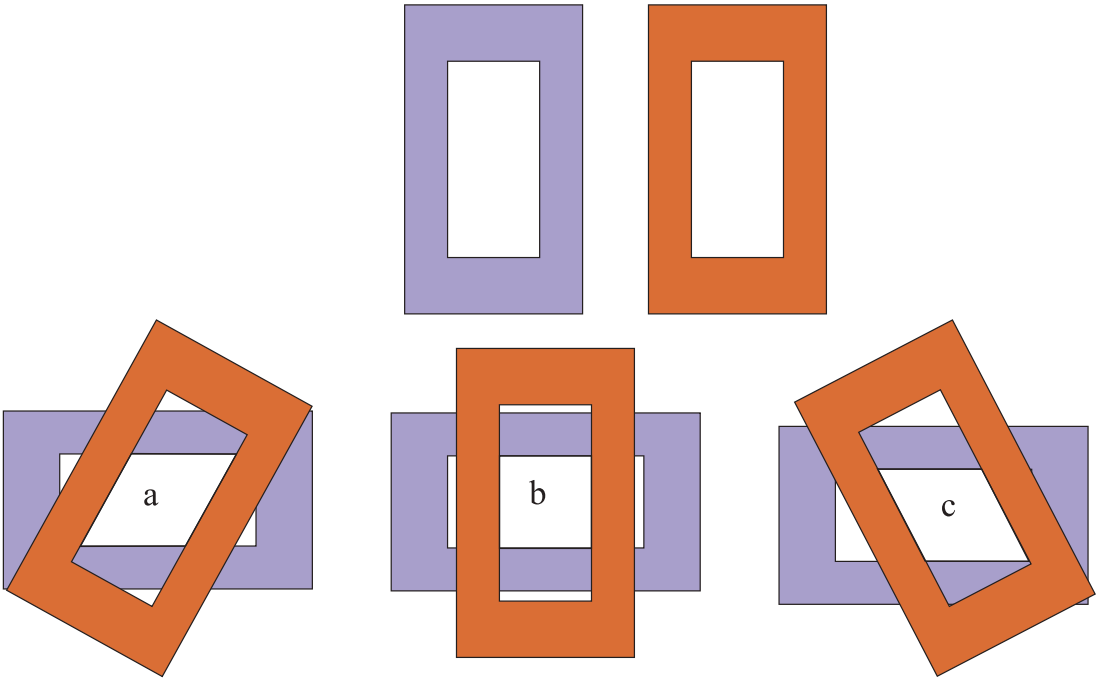
4 What kind of quadrilaterals do we find in the pictures?





Rhombus

Place the two rectangles of the same shape on top of each other to form quadrilaterals of different shapes, as shown below. What shapes do we get?



Let us measure the length of the sides.

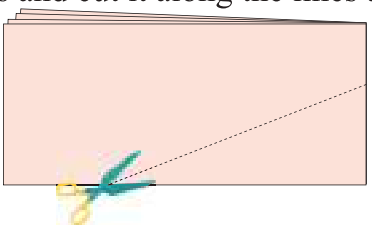
Each side of the shape is equal in length. And the opposite sides are parallel to each other.

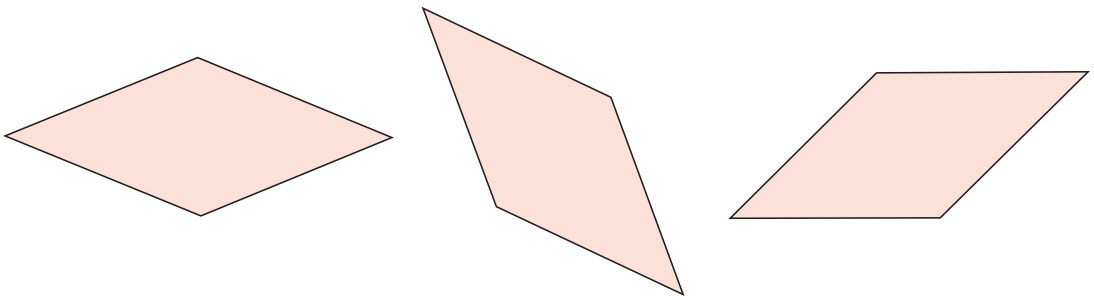
If all the sides of a parallelogram are equal in length, it is called a rhombus. A square is also a rhombus.

We know that all parallelograms are trapeziums. Therefore, a rhombus is also a trapezium.

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1 What type of quadrilateral do we get if we fold a rectangular piece of paper into four folds and cut it along the lines as shown in the picture?







Let us measure the length of the sides.

The length of each side of the quadrilateral is .....

The quadrilateral is a .....



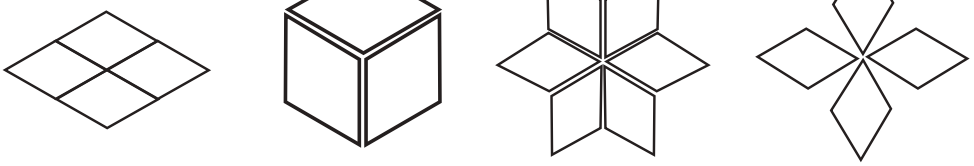
Let us measure the angles.

Two opposite angles are .....

In a rhombus

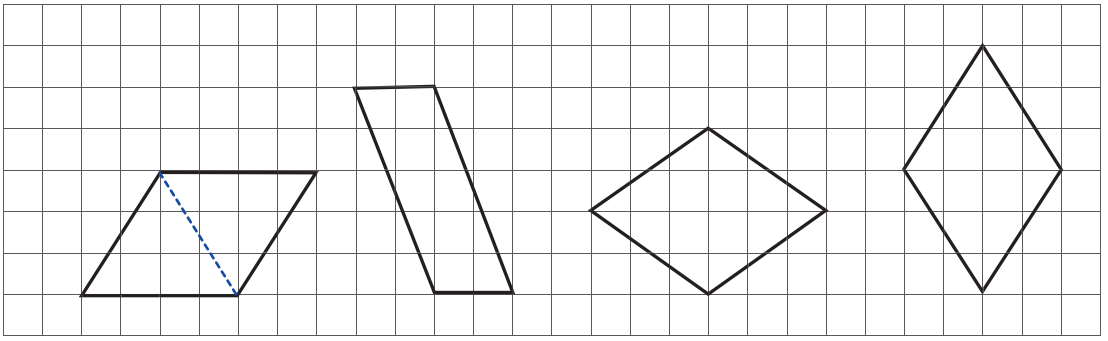
- Opposite sides are parallel to each other.
- Opposite angles are equal to each other.

1 Let us cut rhombuses of the same size and make different design shapes.



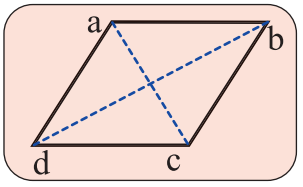
Diagonals of a quadrilateral

What do we get by connecting the opposite vertices of the following quadrilaterals?

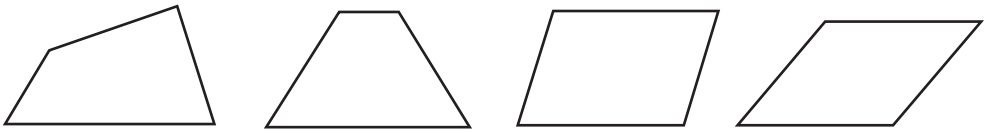




If we connect the opposite vertices of a quadrilateral, we get a diagonal. A quadrilateral has two diagonals but a triangle has no diagonals.



1 Draw diagonals in the following quadrilaterals.

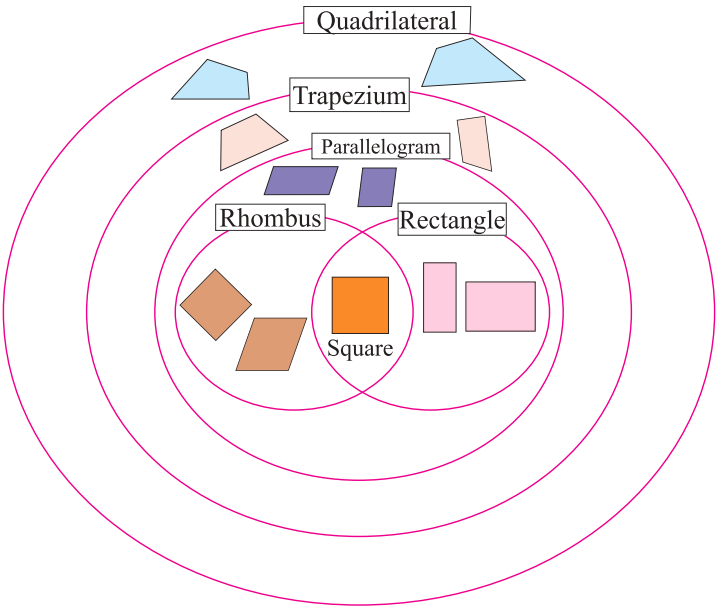


2 Let us write in brief what we found about quadrilaterals in the blanks of the table.

	All the sides are always equal in length	All the angles are always right angles	Opposite sides are always	
			parallel	equal in length
Parallelogram	No			
Rhombus	Yes			
Rectangle	No			
Square	Yes			

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3 In the figure below, the quadrilaterals are arranged inside the circle according to various properties. Review the diagram and fill in the blanks below.



(1) If one pair of opposite sides of a quadrilateral is parallel, it is called ……

(2) If two pairs of opposite sides of a quadrilateral are parallel, it is called ……

(3) A parallelogram whose four sides are equal is called …….

(4) A parallelogram whose four angles are right angles is called ……

(5) If one angle of a rhombus is a right angle, it is called ……

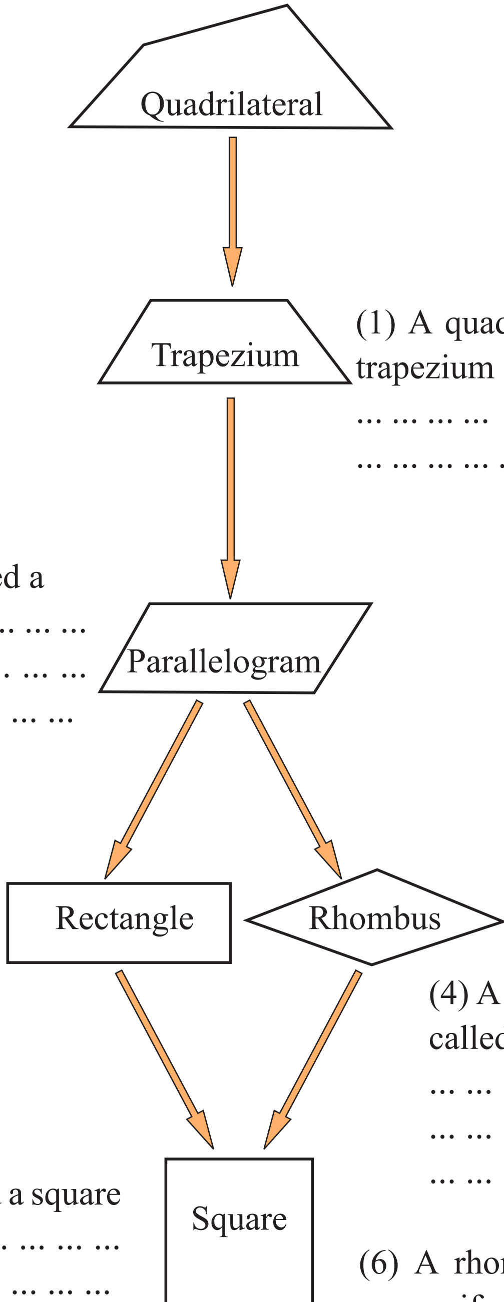
(6) The similarity between a rectangle and a square is that their four angles are ……

(7) The similarity between a rhombus and a square is that their four ..…… are equal to each other.

(8) Rhombus, square, and rectangle are types of ….....……

(9) Rectangles, squares, and rhombuses are types of trapeziums because they each have at least one pair of …… sides.

1 Fill in the blanks below based on the different properties of the quadrilaterals.



(1) A quadrilateral is called a trapezium if ... ...
... ...
... ...

(2) A trapezium is called a parallelogram if ... ...
... ...
... ...

(3) A parallelogram is called a rectangle if ...
... ...
... ...
... ...

(4) A parallelogram is called a rhombus if ... ...
... ...
... ...
... ...

(5) A rectangle is called a square if ... ...
... ...

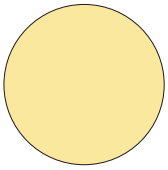
(6) A rhombus is called a square if ... ...
... ...
... ...

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Circle

What are the names of the following shapes and how can we draw the shapes.









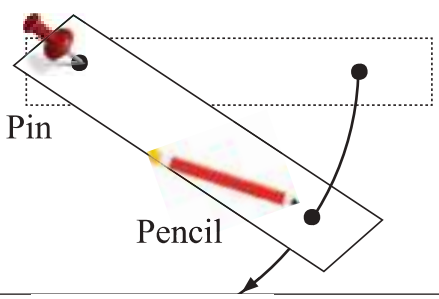
These shapes are called round shapes.



We can draw round shapes by using bangles, bottle caps, etc.

1 Draw round shapes using bangles, pot lids, bottle caps, etc.

2 Collect a pin, a pencil and a rectangular thick paper with two small holes and draw a curved line in the notebook by using them as shown in the picture below.







If we rotate the pencil around the pin once, what shape will be created?

We will get a point and a nice round shape.



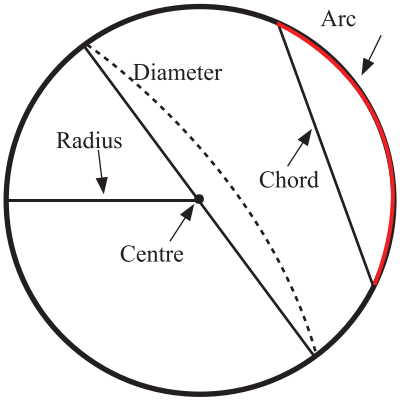
This round shape is called a circle. A curved line that bounds a circle is called the circumference. A circle is a closed curved line in which all the points on the curve are at the same distance from a point inside. This fixed point inside the circle is the centre of the circle.



3 Does each point on the circumference have the same distance from the centre? Why? Let us discuss.

The parts of a circle are shown on the right.

- Radius is the distance from the centre to the circumference.
- An arc is a part of the circumference.
- A chord is a line segment that connects two endpoints of the arc.
- Diameter is a chord that passes through the centre of the circle. Diameter is the largest chord of a circle.



What is the relation between the radius and the diameter of a circle?





If we look at the circle, it is observed that the distance from the centre to the circumference of the circle is always equal.

We also notice that the diameter is twice the radius. The diameter is called the chord that passes through the centre of the circle. Diameter is the largest chord of the circle.



4 Fill in the blank boxes in the sentences about circles.

1) The distance from the centre to the circumference is ☐

2) A part of the circumference is ☐

3) A line that joins any two points on a circle is ☐

4) If the chord passes through the centre of the circle, then it is called ☐

5) If the diameter is 12 cm, then the radius will be ☐ cm.

5 Draw a circle with a radius of 3 centimetres using a pencil compass.

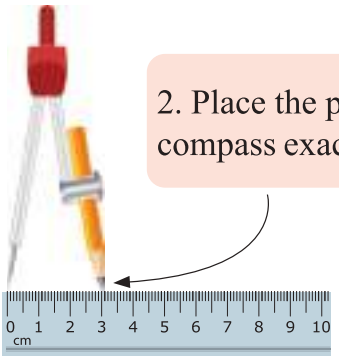


How to draw a circle with a given radius?



Let us look at the steps of drawing.

1. Put the needle of the compass exactly at 0 on the ruler, and make sure that the needle does not move.



2. Place the pencil of the compass exactly at 3 cm.

3. Determine the centre of a circle and put the needle on it.



4. Rotate the pencil around the centre. Be careful that the needle does not move from the centre and the distance from the pencil should not change.



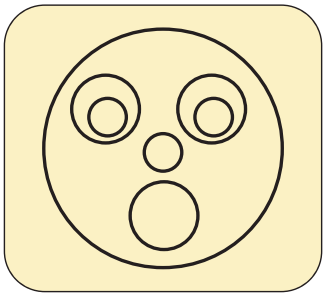
6 Make a design using circles.

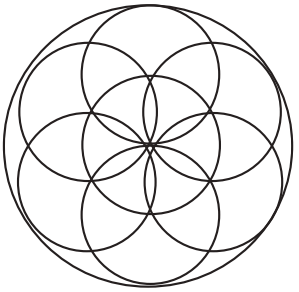


I have drawn a face with circles of different radious.

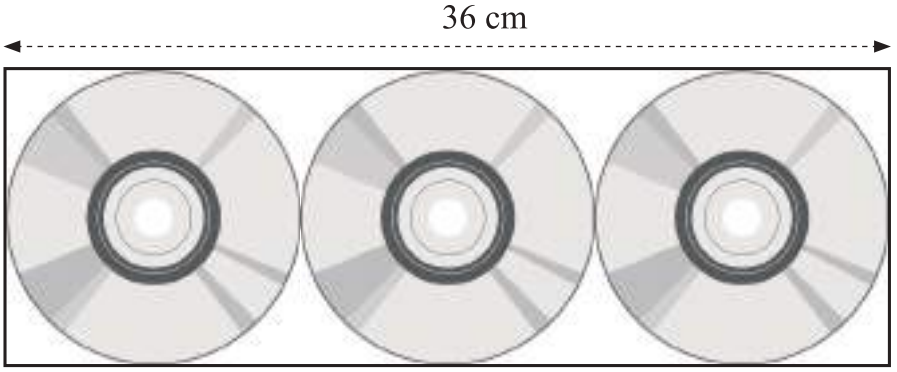
I have made this beautiful design with circles.







1 Three CDs can be stored in a 36 cm long box, as shown in the figure below. What is the radius of a CD?



2 Draw the following circles.

(1) A circle of radius 25 cm.

(2) A circle of diameter 46 mm.

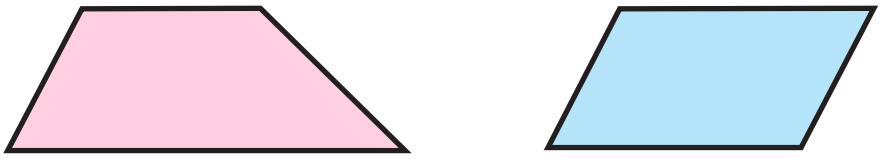
3 The length of a chord passing through the centre of a circle is 6 cm.

(1) Draw the circle.

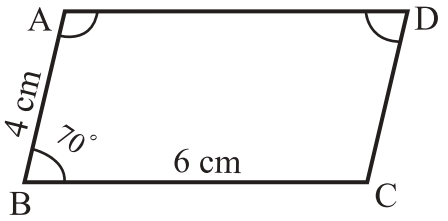
(2) Write three properties of the drawn circle.

Let us try

1. Draw two figures similar to the figure below.

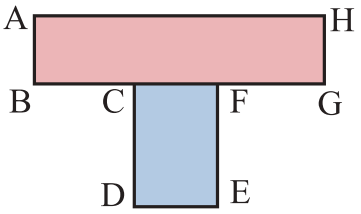


2. Measure the lengths of the sides and the angles of the parallelogram on the right.



(1) AD = ------- cm
(2) CD = -------cm
(3) ∠A =-------°
(4) ∠D =-------°

3. Identify the perpendiculars on the 'DE' side and the 'BG' side in the figure on the right.



(1) ---------- (2) ----------

(3) ---------- (4) ----------

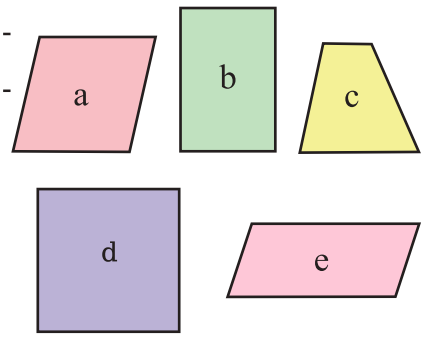
4. Look at the quadrilaterals a, b, c, d, and e on the right below and answer the following questions.

(1) Write the names of the quadrilaterals.

(a) ---------- (b)----------

(c) ---------- (d)----------

(e) ----------

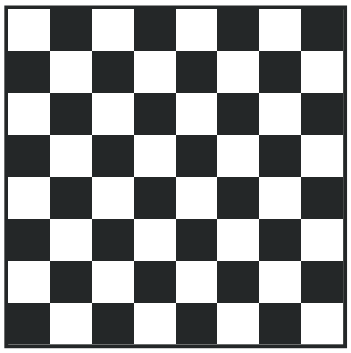
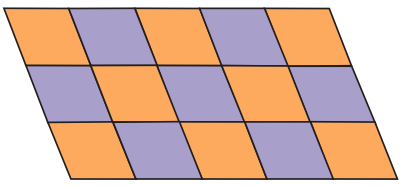
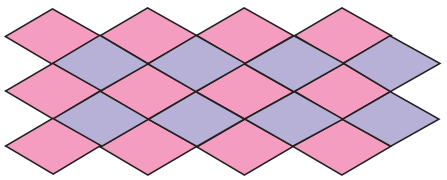
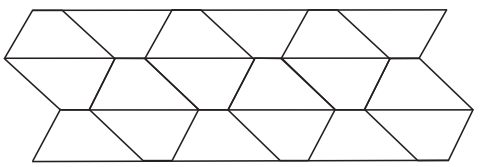
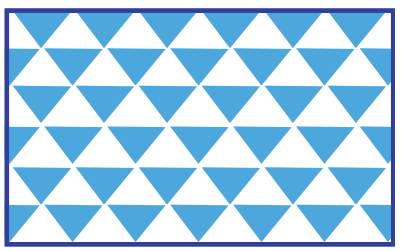


(2) Which quadrilateral has four right angles? ----------

(3) Which quadrilateral has two pairs of parallel opposite sides?----------

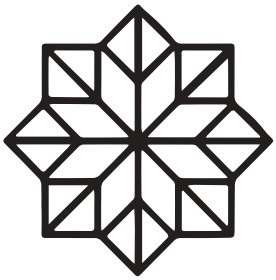
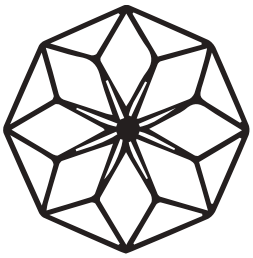
Geometric pattern

What kind of shapes are the following geometric patterns made of ?

Pattern	Name of the shape	Name of patterns
	Square	Square-shaped pattern
		
		
		
		

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1 Look at the following geometric patterns and draw similar patterns on the adjacent blanks.

1 Make geometric partern on the dot paper of your choice.

2 Find out the geometric-shaped patterns of different objects around us and fill in the table below.

Name of the object	Pattern

Solids

Let us find out what solid objects we see in our environment. Are all shapes the same?

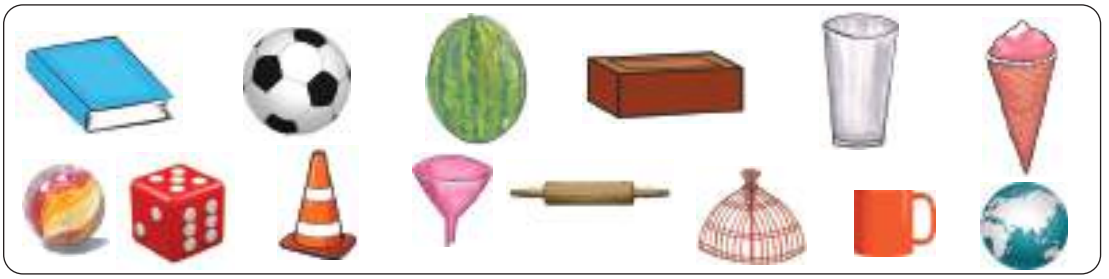


Book, ball, pen, glass, brick, marble, watermelon, balloon, ice cream, etc.



There are variations in shapes.

1 Look at the solids below and fill in the table according to their shape.

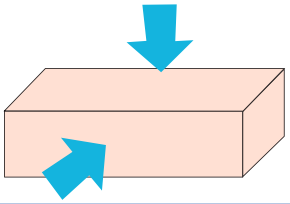


Shape of object	Name of the solid	Write examples
	Cuboid	Brick , ----------, ----------, ---------
	Sphere	Football , ----------, ----------, ----------
	Cylinder	Glass, ----------, ----------, ----------
	Cone	Ice cream , ----------, ----------, ----------

1 Find some more examples of solid objects around us, such as cubes, spheres, cylinders, and cones, and write them down in your notebook.

2026

2 Let us find and discuss what solids look like or what are their properties.



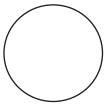
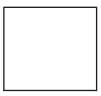
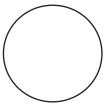


From the top of the cuboid, I can see the quadrilateral/quadrilateral surface.

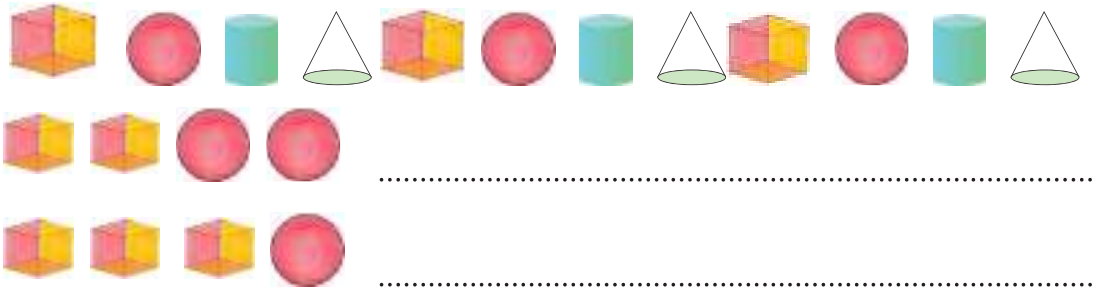
From the side, I can also see the quadrilateral/quadrilateral surface. Actually, the cube has six faces, which look like rectangles or squares.



3 Write the name of the solid object. Draw lines to match the geometric shape of the object when viewed from the top and side.

From the top	Solids	From the side
		
	Name :	
		
	Name :	
		
	Name :	
		
	Name :	

4  Make patterns with the solids.



.....

.....

.....

.....

.....

.....

2 Make patterns of your choice using the solids on the dot paper below.

Let us do

1 Draw a figure.

(1) 5 cm in length, 3 cm in width (Rectangle).

(2) Length of each side is 4 cm (Square).

(3) 4 cm in length, 2.5 cm in width and an angle of 80^0 (Parallelogram) .

(4) A parallelogram and a trapezium.

(5) A circle using a pin, pencil and a rectangular piece of paper with two small holes.

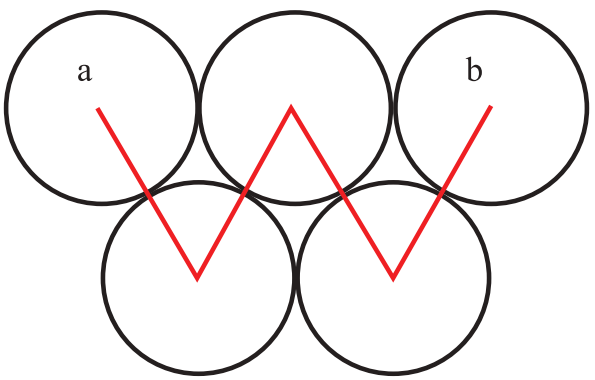
2 Five identical plates are placed in a box as shown in the figure below. Answer the following questions:



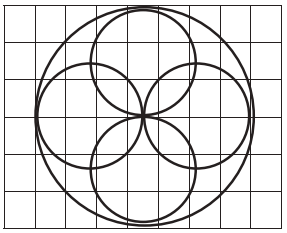
(1) If the radius of each plate is 12 cm, what is the length of the box?

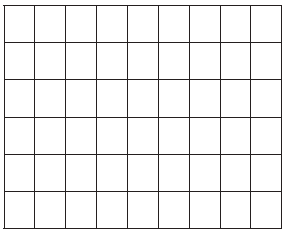
(2) How many plates of 20 cm diameter can be placed in that box?

3 5 equal circles of radius 5 cm are drawn. If we add the centres as shown in the figure below, then find the total length of the line drawn from a to b.



4 Using a compass, draw a design on the right similar to the design on the left.





5 Fill in the table below.

Name of the solids	As seen from the top	As seen from the side
Cube	Rectangle/Square	Rectangle/Square
Sphere		
Cylinder		
Cone		

6 Check the following statements and write whether it is true or false. If the statement is false, write the correct information.

Statement	True/False	If false, then correct statement
(1) The number of sides of a quadrilateral is three		
(2) A trapezium has at least one pair of parallel sides		
(3) A rectangle is a trapezium		
(4) A parallelogram is a rhombus		
(5) All rhombuses are squares		
(6) All parallelograms are rectangles		
(7) None of the sides of a rhombus is parallel		
(8) All rhombuses are trapeziums		
(9) All trapeziums are parallelograms		
(10) The opposite angles of a parallelogram are equal		

Chapter 10

Data Arrangement

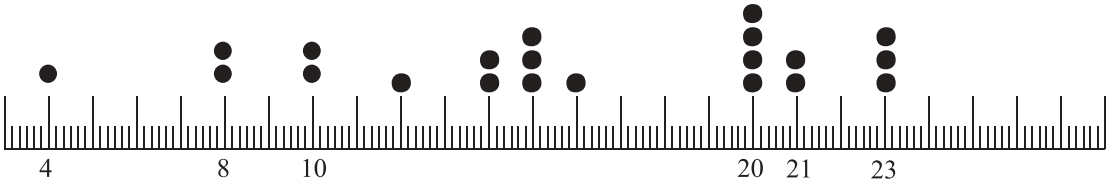
The number of students of grade 5 present in a month is given below. How can we arrange this data?



23, 20, 8, 15, 12, 21, 23, 10, 15, 14, 20, 21, 16, 20, 8, 23, 15, 20, 14, 10, 4

I have organized the data in ascending order.
4, 8, 8, 10, 10, 12, 12, 14, 15, 15, 15, 16, 20, 20, 20, 20, 21, 21, 23, 23, 23

I have placed dots on a number line to represent the data.



We can also create a table using the data.

The data can be presented by specific groups or class intervals.

Class Interval	Tally Marks	Number
1–5		1
6–10		4
11–15		6
16–20		5
21–25		5
Total		21



Here I have prepared a table using a class interval of 5. 1–5, 6–10, 11–15, 16–20 and 21–25 are each a class.



Here, let us create a table with class interval 10.

Class Interval	Tally Marks	Number
Total		

1 The data for 20 days on how many cups of tea were sold daily at a tea stall is given blow:



12, 21, 13, 9, 22, 23, 12, 15, 9, 22, 21, 23, 23, 15, 14, 11, 23, 21, 21, 20

(1) Let us arrange the data in ascending order.

(2) Let us create a table with a class interval of 5

Class Interval	Tally Marks	Frequency
total		

1 The weights of 30 students of a school are given below:

Weight (KG)	24, 35, 43, 22, 37, 42, 39, 31, 45, 27, 32, 23, 34, 45, 49, 25, 37, 26, 48, 26, 32, 41, 24, 40, 36, 27, 33, 47, 30, 38

(1) Let us arrange the data in ascending order.

(2) Let us create a table with a class interval of 10 and answer the following questions.

(a) Which class contains maximum number of students?

(b) Which class contains minimum number of students?

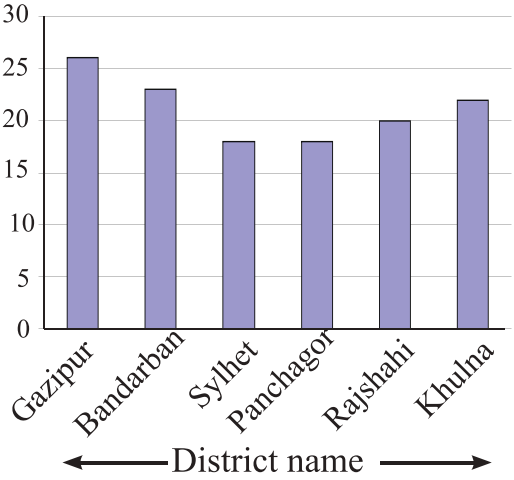
What is meant by the following graph?



The temperature of 6 districts in Bangladesh on a particular day is shown.



This is a bar diagram.



Let us fill in the blanks.

Highest temperature: _____ district

Lowest temperature : _____ district

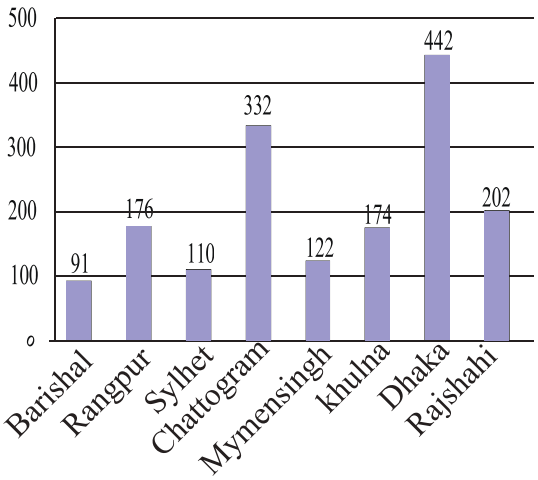
The temperature at Rajshahi is _____ ^{0} C

1 The number of population of 8 divisions in Bangladesh is shown in the following graph.

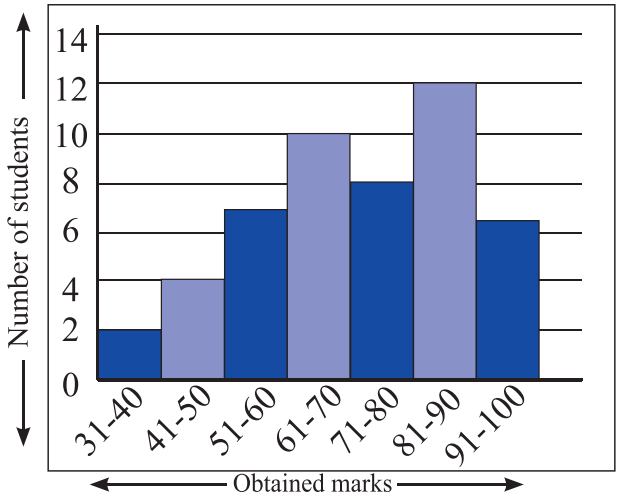
a) What is the difference of population between Chattogram and Mymensingh division?

b) How many more population are in Rangpur division than in Sylhet division?

c) Which divisions have a population of more than two crore?



2 The marks obtained in Mathematics by 50 students of grade 5 are given in the table beside. Let us observe the results through a graph.



Graph: Histogram

Number of students	Obtained marks
31-40	2
41-50	4
51-60	7
61-70	10
71-80	8
81-90	12
91-100	7
total	50



We can present it through bar diagram.

You are right. In the column diagram, there are gaps between the columns, but here we see no gap between the columns.





This is a histogram.

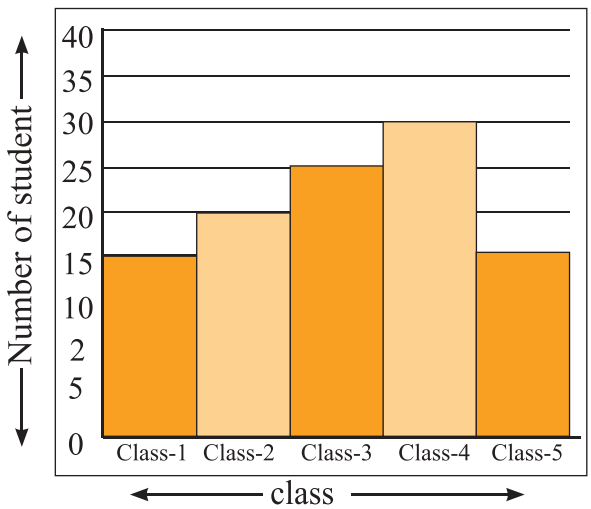
Rules of drawing histogram

- On a graph paper, let us mark the class intervals of the obtained marks along the horizontal axis.
- Along the vertical axis, let us mark the number of students so that all the numbers appear on the graph.
- Let us draw rectangles where the width represents the class interval and the height represents the number of students.
- Note that, these rectangles are drawn without gaps in between.

1 Draw a histogram from the table.

Class interval	number
5-9	2
10-14	5
15-19	4
20-24	10
total	21

2 The number of students in each class of a school is shown in the following graph.



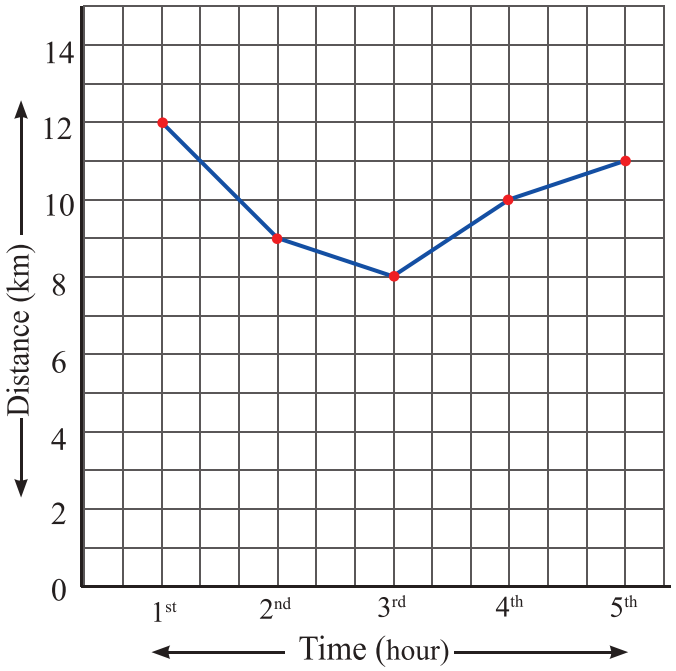
a) Which class has the highest number of students?

b) What is the total number of students in that school?

c) Let us create more questions from the histogram.

Line Graph

Sadid went to his grandfather's house riding a bicycle. What is shown in the following graph?





Here, the distance per hour travelled by Sadid is shown.

He travelled 12 km in 1st hour, 9 km in 2nd hour, 8 km in 3rd hour, 10 km in 4th hour and 11 km in 5th hour.



This type of graph is called a line graph.



1) The least distance travelled is in ..... hour?

2) The maximum distance travelled is in..... hour?

3) Make a table from the line graph.

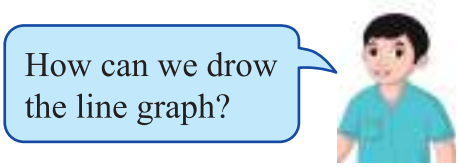
4) The average distance travelled ____.

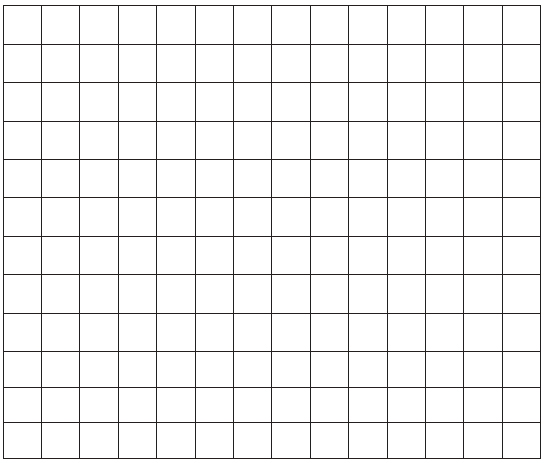
Hour	Distance (km)

2026

1 The table below shows the amount of rainfall (mm) in Dhaka district for 7 days. Let us draw a line graph below using the information given in the table.

Day	Rainfall (mm)
Saturday	5
Sunday	2
Monday	12
Tuesday	7
Wednesday	8
Thursday	4
Friday	0





Rules of drawing the line graph

- Let us mark the name of the day along the horizontal axis.
- Along the vertical axis, let us mark the rainfall (mm) so that all numbers remain on the graph.
- Draw the points of rainfall on the graph paper against the days.
- Add the points with each other.

1 Number of books sold in five weeks by a bookseller is given below:

Week	Number
1st	40
2nd	60
3rd	80
4th	120
5th	70

a) What is the total number of books sold in five weeks?

b) What is the average number of books sold per week?

c) Draw a line graph from this information.

Pie chart

What can we know from the chart about Shaon's activities on a holiday?



Shawn's favorite activities



The chart shows that Shawn prefers playing games the most, then gardening, and finally sleeping.

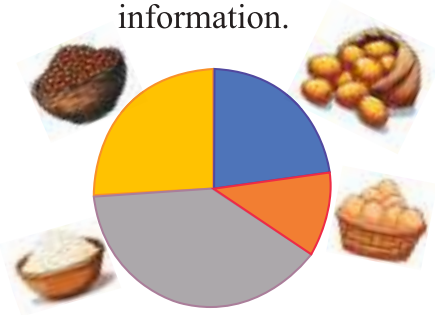


You are right. Is there any name for this diagram?



This type of diagram is called Pie Chart.

1 The sales of rice, lentils, potatoes, and eggs for one day in a grocery store are shown in the following pie chart. Fill in the blanks with appropriate information.



The most sold item is .....

The least sold item is .....

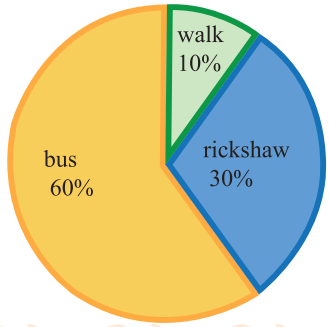
2 On the way to sumon's uncle's house, he travels some of the parts by walking, some of the parts by rickshaw and some of the parts by bus covering a total distance of 5 km. The portion of the journey covered by each mode of transport is shown in the pic chart below.



The pie chart implies that Sumon travels by walking 10%, by rickshaw 30% and by bus 60%.



What is the distance in km does Sumon cover by walking?



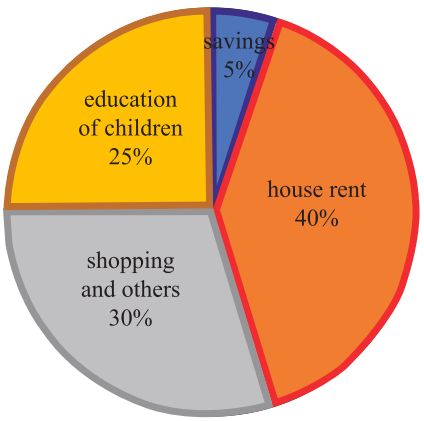
Sumon walks
= (10% of 5) km
= $(5 \times \frac{10}{100})$ km
= (5 × 0.1) km
= 0.5 km

Let us find the distance he travels by rickshaw and by bus.



He travels by rickshaw =
(☐ of 5) km
= (5 × ☐) km
= ☐ km
and he travels by bus = (☐ of 5) km
= (5 × ☐) km
= ☐ km

1 Monthly salary of Mr Mizan is Tk. 25,000. His expenditure per month is shown by the following pie chart.

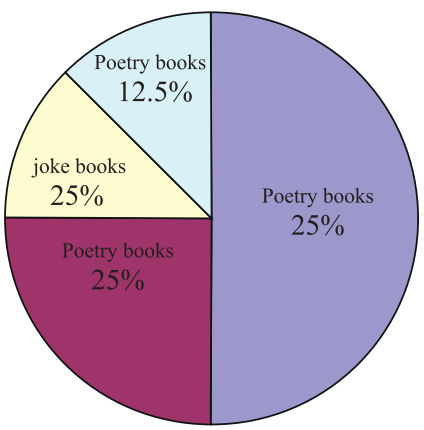


a) How much money does Mr. Mizan spend on the education of his children?

b) How much money does he save per month?

c) How much money does he save in a year?

2 Tafreen bought 48 books from a book fair. Among those, 50% are stories, 25% are jokes, 12.5% are poetry and 12.5% for riddles.



a) What type of books did she buy the most?

b) How many more joke books did she buy than poetry books?

c) What is the number of riddle books?

Let us try

(1) Ask classmates how much time they take to come to school from home, and write it down.

Arrange the data in ascending order.

Make a table with a class interval of 5 using the data.

class interval	time (minute)

Draw a histogram from the table.

Let us do

1. The marks obtained in mathematics by the students of grade 5:

   50, 34, 95, 80, 48, 55, 87, 40, 35, 76, 82, 64, 43, 52, 92, 38, 88, 72, 85, 97, 83, 65, 40, 54, 88, 99, 61, 81, 95, 77

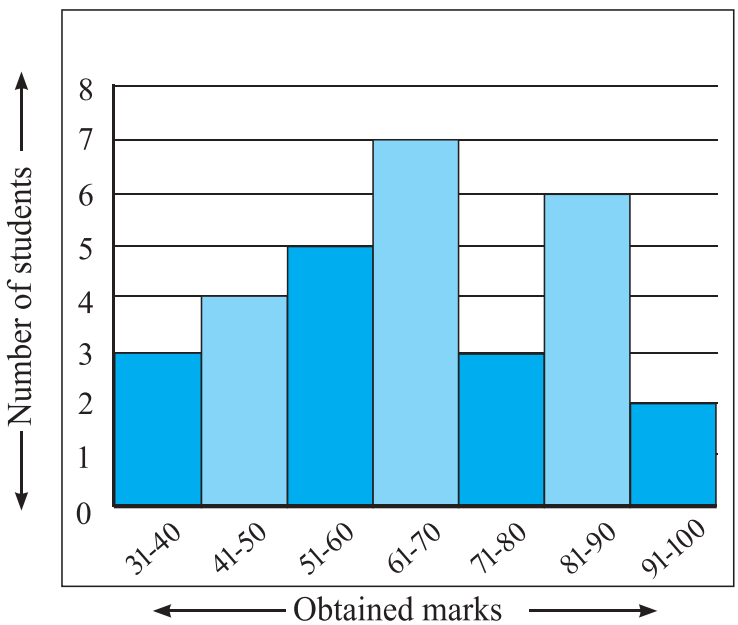
   a) Arrange the data in ascending order.

   b) What is the highest and the lowest marks obtained in mathematics?

   c) Let us make a table with a class interval of 10 from the data.

   d) Let us draw a histogram based on the table.

2. The following histogram is drawn on the basis of the marks obtained in mathematics by the grade 4 students.



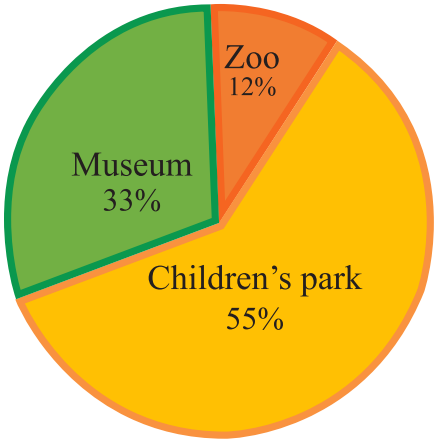
   a) How many students are there in grade 4 ?

   b) In which class interval the number of students is maximum?

   c) Let us make a table from the histogram above.

   d) What percentage of students is there in the class interval of 51-60?

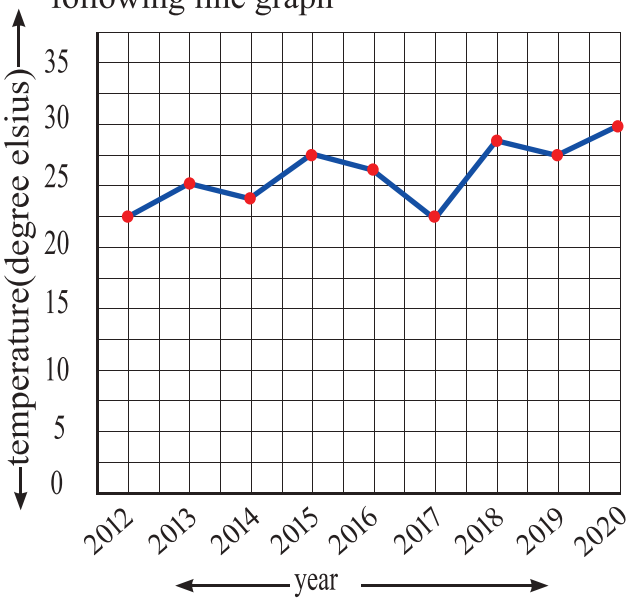
3 There are 500 students in a school. The head teacher wants to take everybody on a picnic. The pie chart below shows how many students wish to go to each of the three places: the zoo, the children's park, and the museum.



a) How many children are willing to go to the zoo?
b) How many children are willing to go to the Children's Park?
c) How many children are willing to go to the museum?

4 Let us measure the weight (kg) of each student in our class.
a) Let us arrange the data in ascending order.
b) Let us make a table with a class interval of 5.
c) Let us draw a histogram from the table.
d)In which class interval the number of students is maximum?

5 The average temperature (°C) from the year 2011 to 2020 is given in the following line graph



a) What was the temperature in 2017 in degrees Celsius?
b) In which year the temperature was the highest?
c) Let us make a table from the line graph.

End

Academic Year 2026, Class Five – Mathematics

Mathematics possesses
not only truth, but supreme beauty.
– Bertrand Russell

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