



We know that repeated subtraction of a number is division.

For example - If 8 bananas are to be distributed equally among 4 children-

Initially distributing one banana each $8 - 4 = (4 \text{ bananas left})$

Distributing one banana each second time $4 - 4 =$

(All the bananas have been distributed)

4 children got 2 bananas each after distributing it two times.

Dividing any number in equal parts is Division.

If 8 bananas are to be distributed equally among

4 children -

$$8 \div 4 \text{ or}$$

$$\begin{array}{r} \text{Dividend} \\ 4 \overline{) 8} \text{ (2 Quotient)} \\ \text{Divisor} \quad - 8 \\ \hline 0 \text{ Remainder} \end{array}$$

Let's see - ₹ 484 is to be distributed equally among 4 persons. How many rupees will each person get? First guess, then answer -



Now solve it -

$$484 \div 4$$

$$\begin{array}{r} 1 \dots \dots \\ 4 \overline{) 484} \\ - 4 \downarrow \\ \hline 08 \\ - \dots \downarrow \\ \hline 0 \dots \\ - \dots \\ \hline 0 \dots \end{array}$$

Hence, each will get ₹

0 Remainder

The teacher should make the students practise the above mentioned example as an activity



Do it yourself

● 2) 6 3 8 (

● 5) 4 7 0 (

Now let's distribute
₹ 8550 equally among 12
persons -

Look - $8550 \div 12$

$$\begin{array}{r}
 712 \\
 12 \overline{) 8550} \\
 \underline{- 84} \downarrow \\
 15 \downarrow \\
 \underline{- 12} \downarrow \\
 30 \downarrow \\
 \underline{- 24} \\
 6
 \end{array}$$

6 Remainder

Hence, each person will
get ₹ 712 and ₹ 6 will be
left.



Think-

- In dividend 8550, the digit 8 at thousands place, is smaller than the divisor 12. Therefore, it is not possible to divide it. So, by taking the digit 5 with 8 which is at hundreds place, the number formed is 85, which is greater than divisor 12. Now, divide 85 into 12 equal parts - $12 \times 7 = 84$, 85 is divided by 12 seven times and remainder is 1

$$\begin{array}{r}
 7 \\
 12 \overline{) 8550} \\
 \underline{- 84} \\
 1
 \end{array}$$

- Now write the digit 5, which is at tens place of dividend beside 1. The number formed is 15, which is greater than divisor. Now divide 15 into 12 equal parts - $12 \times 1 = 12$, 15 is divided by 12 one time and remainder is 3

$$\begin{array}{r}
 71 \\
 12 \overline{) 8550} \\
 \underline{- 84} \downarrow \\
 15 \downarrow \\
 \underline{- 12} \\
 3
 \end{array}$$

- Now write the digit 0, which is at ones place of dividend beside 3. The number formed is 30, which is greater than the divisor. Now divide 30 into 12 equal parts - $12 \times 2 = 24$, 30 is divided by 12, 2 times and remainder is 6

$$\begin{array}{r}
 712 \\
 12 \overline{) 8550} \\
 \underline{- 84} \downarrow \\
 15 \downarrow \\
 \underline{- 12} \downarrow \\
 30 \downarrow \\
 \underline{- 24} \\
 6
 \end{array}$$

6 Remainder

How can we check our answer?

We check the answer by putting the value in -

Dividend = Quotient X Divisor + Remainder

Look - In this question $8550 \div 12$, $712 \times 12 + 6 = \dots\dots\dots$ (Is it equal to dividend?)



Look : $63980 \div 15$ or

$$\begin{array}{r}
 4265 \\
 15 \overline{) 63980} \\
 \underline{- 60} \downarrow \quad \leftarrow \text{subtract } 4 \times 15 \\
 39 \quad \leftarrow \text{bring 9 below} \\
 \underline{- 30} \downarrow \quad \leftarrow \text{subtract } 2 \times 15 \\
 98 \quad \leftarrow \text{bring 8 below} \\
 \underline{- 90} \downarrow \quad \leftarrow \text{subtract } 6 \times 15 \\
 80 \quad \leftarrow \text{bring 0 below} \\
 \underline{- 75} \quad \leftarrow \text{subtract } 5 \times 15 \\
 5 \quad \text{Remainder}
 \end{array}$$

Hence, quotient = 4265 , remainder = 5

Now check the answer -X += 63980

Look at this too -

$$\begin{array}{r}
 4085 \\
 15 \overline{) 61280} \\
 \underline{- 60} \downarrow \quad \leftarrow \text{subtract } 4 \times 15 \\
 12 \quad \leftarrow \text{bring 2 below} \\
 \underline{- 00} \downarrow \quad \leftarrow \text{subtract } 0 \times 15 \\
 128 \quad \leftarrow \text{bring 8 below} \\
 \underline{- 120} \quad \leftarrow \text{subtract } 8 \times 15 \\
 80 \quad \leftarrow \text{bring 0 below} \\
 \underline{- 75} \quad \leftarrow \text{subtract } 5 \times 15 \\
 5 \quad \text{Remainder}
 \end{array}$$

Here after bringing the next digit below, the obtained number is 12, which is smaller than the divisor 15. In such a condition it is divisible by 0 times.

Hence, quotient = 4085, remainder = 5

Now check the answer -X += 61280



Do it yourself -

Solve and check the answer -

● $65058 \div 14$

● $76030 \div 17$

● $20595 \div 19$

Now let's divide by 20, 30, 40, 90-

$$17110 \div 20$$

or

$$\begin{array}{r} 855 \\ 20 \overline{) 17110} \\ \underline{-160} \\ 111 \\ \underline{-100} \\ 110 \\ \underline{-100} \\ 10 \text{ Remainder} \end{array}$$

Quotient = 855 , Remainder = 10

Also check the answer obtained -

$$\text{---} \times \text{---} + \text{---} = \text{---}$$



Do it yourself -

Solve and check the answer



Think -

Is it necessary to know the tables of 20, 30, 40,90 to divide a number by 20, 30, 40,90 or can it be done by using the tables of 2, 3, 4,9?

Properties of Division

1

When zero is divided by any number, the quotient is always zero.

$$\text{or } 0 \div \text{any number} = 0$$

Let's Understand - If we divide zero into nine equal parts, what will be its one part?

Look -

$$0 \div 9$$

$$\text{or } 9 \overline{) 0} \begin{array}{l} 0 \\ - 0 \\ \hline 0 \end{array}$$

Quotient = 0

Similarly, $0 \div 5 = 0$ and $0 \div 12 = 0$

- In dividend 17110, 1 and 17 are less than the divisor 20, so start dividing 171 by 20.
- Think $20 \times 8 = \text{---}$
- In this step 8 is quotient and 11 is remainder
- Now write digit 1 which is at tens place of dividend beside 11, the number formed is 111
- Now divide 111 by 20
- Think $20 \times 5 = \text{---}$
- In this step quotient is 5 and remainder is 11
- Bring below the ones digit 0, the number formed is 110
- Now divide 110 by 20
- In this step product is 5 and the remainder is 10





Do it yourself -

● $0 \div 8 = \dots\dots\dots$

● $0 \div 17 = \dots\dots\dots$

● $0 \div 19 = \dots\dots\dots$



Think-

Is it possible to divide a number by zero? Discuss with your friends and teachers.

2 When any number is divided by 1, the quotient is the number itself.

or any number $\div 1 =$ the same number

Let's understand - What will be the quotient if 8 is divided by 1?

Look -

$8 \div 1$

or

1) 8 (8

- 8

0

Quotient = 8

Similarly, $64 \div 1 = 64,$

$348 \div 1 = 348,$

$5047 \div 1 = 5047$



Do it yourself -

● $546 \div 1 = \dots\dots\dots$

● $8752 \div 1 = \dots\dots\dots$

● $90465 \div 1 = \dots\dots\dots$

3 When any number is divided by itself the quotient is always 1.

Let's understand - What will be the quotient if 5 is divided by 5?

Look -

$5 \div 5$ or

5) 5 (1

- 5

0

Quotient = 1

Similarly, $2 \div 2 = 1,$

$6 \div 6 = 1$ and

$12 \div 12 = 1$





Do it yourself -

● $4 \div 4 = \dots\dots\dots$

● $11 \div 11 = \dots\dots\dots$

● $18 \div 18 = \dots\dots\dots$

Word Problems

- A book has 1024 pages. Shivani reads 16 pages in a day. In how many days will she be able to read the entire book?

Look and Understand -

Total number of pages = 1024

Number of pages read in a day = 16

Number of days to read the entire book = $1024 \div 16$

or

$$\begin{array}{r} 64 \\ 16 \overline{) 1024} \\ \underline{- 96} \\ 64 \\ \underline{- 64} \\ 00 \end{array}$$

Quotient = 64 Remainder = 0

Hence, Shivani will read the entire book in 64, days.

- Alok has distributed 10234 bags equally in 50 schools. How many bags did each school get and how many bags were left?

Look and Understand -

Total number of schools = 50

Total number of bags = 10234

Number of bags, each school got = $10234 \div 50$



★ The teacher should provide enough opportunity to the children to verify the properties of division.



or

$$\begin{array}{r} 204 \\ 50 \overline{) 10234} \\ \underline{-100} \downarrow \\ 23 \downarrow \\ \underline{-00} \downarrow \\ 234 \\ \underline{-200} \\ 34 \end{array}$$

Quotient = 204 , Remainder = 34

So, each school got 204 bags and 34 remained.



Do it yourself -

- A packet contains 12 pencils. How many such packets are required to keep 1524 pencils and how many will be left?
- 18 books were bought for ₹ 4230. How many rupees are needed to buy 1 such book?

We have learnt

- When zero is divided by any number, the quotient is always zero.
- When any number is divided by 1, the quotient is the number itself.
- When any number is divided by itself, the quotient is always 1.
- It is not possible to divide any number by zero.
- Division of five digit numbers by two digit numbers.

Exercise

1. Solve - (a) $56781 \div 13$ (b) $43110 \div 15$ (c) $43028 \div 30$
2. 15 bars of soap can be kept in a carton. Shaily wants to keep 2340 bars of soap in cartons. How many cartons will she need?
3. Tickets for 17 people to travel by Rajdhani Express from Kolkata to New Delhi was purchased for ₹ 49130. What is the cost of ticket for one person?
4. Divide the greatest 5-digit number by the smallest 2-digit number and find the quotient and the remainder.
5. Divide the greatest four digit number formed by the digits 8,7,0 and 5, by the smallest 2-digit number formed by the digits 6 and 1. Write the quotient and the remainder.
6. If any number is divided by 14, the quotient is 203 and the remainder is 11. What will be the number?
7. There are 660 trees in 11 rows in Jasvinder's orchard. If the number of trees in each row is equal, how many trees are planted in a row?



Great Mathematician

Bhaskaracharya -II



Bhaskaracharya was born at Bijapur in Karnataka. Bhaskaracharya has a special place among Indian Mathematicians. He has written the famous mathematical book 'Lilawati'. This book has been translated into many languages of the world. His daughter's name was Lilawati, who herself was a great mathematician.

