CHAPTER 7: DIVISION

DIVISION

➢ INTRODUCTION

Division is the grouping of many articles in required number of parts. In the division, table of 2 to 20 is helpful to divide any number. In this chapter, we will learn about the division of a group of articles in required number of groups.

Division:

- Division is the reverse process of multiplication. It means grouping or sharing. It is also called repeated subtraction. - is the symbol for division.
- Equal sharing or grouping means to divide the things equally without anything being left over or remaining.
- The number which is **divided** is called the dividend. The number which divides the dividend is called the number of times the divisor divides the dividend is called the **quotient.** The number of the dividend left undivided is called the **remainder.**

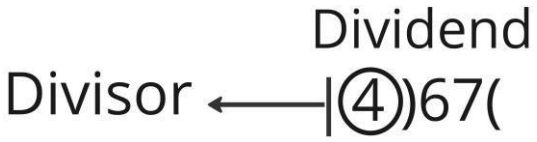
  e.g., In 20 ÷ 5 = 4, 20 is the dividend, 5 is the divisor and 4 is quotient when 20 is divided exactly by 5. So, remainder is 0.

- 35 ÷ 3 can be written as $\frac{35}{3}$.
- Dividing 0 by a number gives 0. **e.g.,** $\frac{0}{5} = 0$
- A number **cannot** be divided by 0. **e.g.,** $\frac{3}{0}$ cannot be done.
- Dividing a number by 1 gives the same number as quotient, **e.g.,** $\frac{7}{1} = 7$
- Dividing a number by itself gives 1 as quotient, **e.g.,** $\frac{6}{6} = 1$
- Division of a 1 - digit number by another 1 - digit number, **e.g.,** 9 ÷ 3 = 3.
- Division of a 2 -digit number by a 1 - digit number, **e.g.,** Divide 67 by 4.

Note: Unlike addition, subtraction and multiplication which are done from the right most digit (i.e., ones) division is done from the left most digit of the dividend.

Step-1: 67 ÷ 4

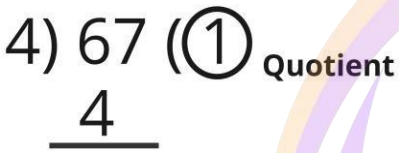
Write the given division as shown.



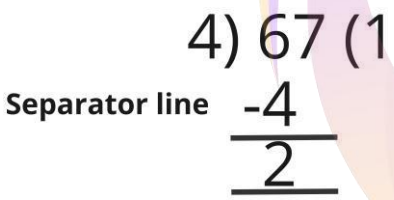
Step - 2: Starting from the left most digit, find the number of times the divisor is in the digit.

There is one 4 in 6.

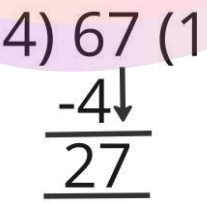
Put this 1 in quotient and 4 below 6 as shown.



Step - 3: Now, subtract 4 from 6 in the dividend and write the difference 2 below the



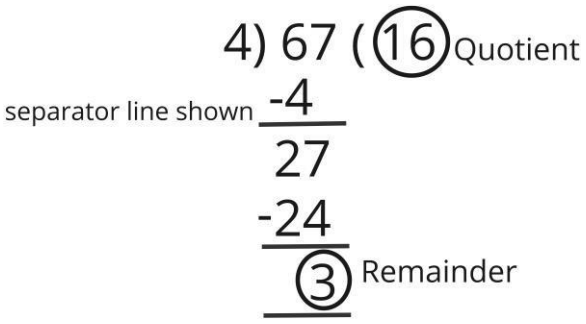
Step - 4: Bring down the next digit (i.e., 7) beside 2 as shown.



Find the number of 4's in the new dividend 27.

4 × 6 = 24 and 4 × 7 = 28

So, there are 6 fours in the dividend 27. Write 6 beside 1 in the quotient and 24 below 27 as shown. Subtract 24 from 27 and write the difference 3 below the



Step - 5: The number 3 < 4 and 4 cannot divide 3. So, 3 remains undivided and is called the remainder. Stop the division when the remainder is less than the divisor.

Therefore, in 67 ÷ 4:

67 is **dividend**; 4 is **divisor**; 16 is **quotient** and 3 is **remainder**.

44 ÷ 5 = 8 R 4 is a division statement.

For every division fact, there are two multiplication facts.

40 ÷ 5 = 8

a) 40 = 5 × 8

b) 40 = 8 × 5

For every multiplication fact there are two division facts.

5 × 8 = 40

a) 40 ÷ 5 = 8

b) 40 ÷ 8 = 5

➢ LEARNING OBJECTIVE

This lesson will help you to:

- know about division
- learn the method of division.
- write a division problem.
- solve a division problem.

QUICK CONCEPT REVIEW

Division

Division means equal sharing or making groups of equal things.

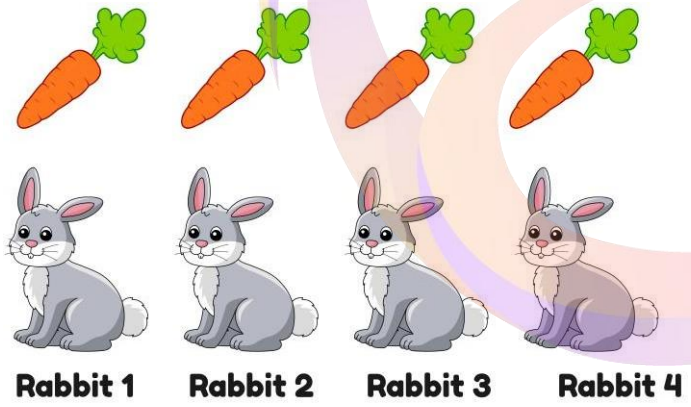
Let us understand with the help of an example.

Maria has 4 rabbits. She has 8 carrots that she wants to distribute equally among them. How many carrots will each rabbit get?

This can be solved by using Division

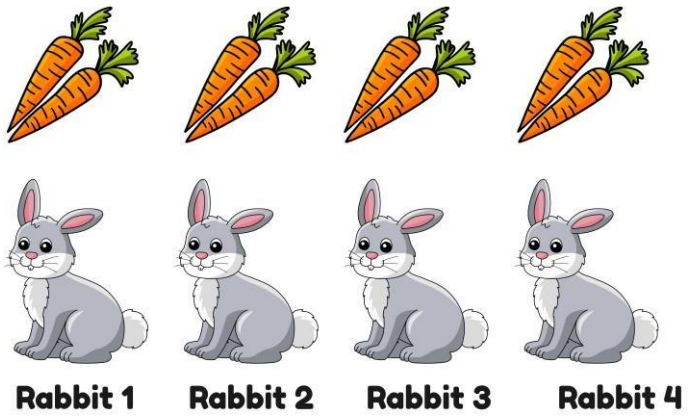
First Maria will give one carrot to each rabbit

Step 1



Then she finds that she still has some carrots. Now she gives one more carrot to each rabbit.

Step 2



There is no more carrot left now. Each rabbit gets 2 carrots.

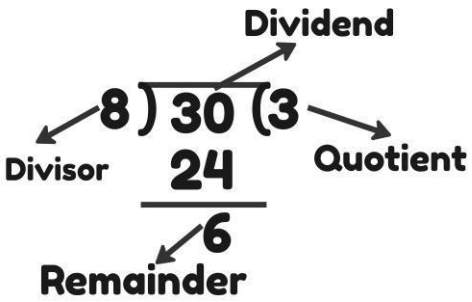
So, here Maria equally divides 8 carrots among 4 rabbits.

Real Life Examples

- When you are eating a pizza, you have to divide the pizza in equal parts so that everyone gets an equal share, you can use division.
- If you have 10 chocolates and you want to share it with you want to share it with your 5 friend then you can use the method of division.

Properties of Division

- It is the reverse of multiplication.
- Division is repeated subtraction.
- '-' is the symbol of division.
- It does not always happen that a number divides completely. Sometimes some number is left that cannot be divided any further. Such a number is called remainder.



❖ Dividing a number by 1

When we divide a number other than 0 by 1, we get the number itself.

For Example: 8 ÷ 1 = 8

10 ÷ 1 = 10

❖ Dividing O by a number

When we divide zero by a number we get '0' as answer.

For Example: 0 ÷ 6 = 0

0 ÷ 13 = 0

❖ Dividing a number by itself

When we divide a number other than zero by the number itself we get 1 as answer.

For Example: 10 ÷ 10 = 1

13 ÷ 13 = 1

0 ÷ 0 = 0

Historical Preview

An obelus (÷)is a symbol consisting of a short horizontal line with a dot above and below. The word 'obelus' comes from ancient Greek word for a sharpened stick or pointed pillar.

Methods of Division

❖ **Short division with remainder method:**

Divide 30 by 8.

It can also be written as 30 ÷ 8

Step 1: Arrange the numbers in the following manner $8\overline{)30}$

Step 2: We divide from left

$8 \times 3 = 24$

which is less than 30

$8 \times 4 = 32$

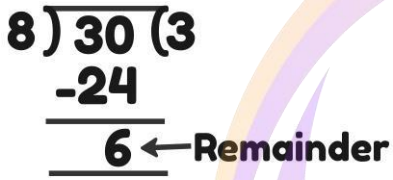
which is more than 30

we take 3 as quotient

$8 \times 3 = 24$

$30 - 24 = 6$

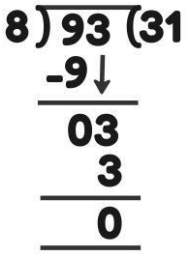
Thus we have



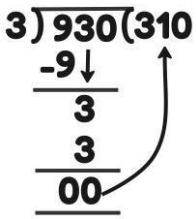
❖ **Division with no remainder:**

Let us consider an example where no remainder is left on division.

Divide 93 by 3 or $93 \div 3$



Now, consider division of 930 by 3.



Here the zero left in the dividend will shift to the quotient.

❖ **Long Division Method:**

Divide 93 by 4 using long division method

Step 1: Arrange the numbers in the following manner. $4\overline{)93}$

Step 2: We divide from left.

4 × 2 = 8 which is less than 9 and

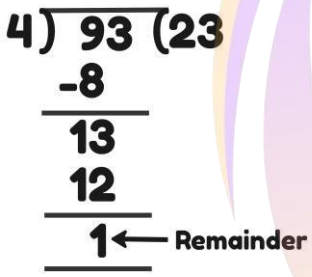
4 × 3 = 12 greater than 9

We take 2 as quotient

4 × 2 = 8

9 - 8 = 1

Step 3: We see 4 × 3 = 12 which is less than 13 and 4 × 4 = 16 which is more than 13.



Basic term used in division

❖ Dividend: It is the number that we divide

❖ Divisor: It is the number with which we divide.

❖ Quotient: It is the result obtained on division

❖ Remainder: It is the number left undivided

Relation between Dividend, Divisor. Quotient and Remainder:

Dividend = (Quotient × Divisor) + Remainder