Division

Division is the process of splitting a number into equal parts. It is the opposite of multiplication. The number being divided is called the dividend, the number you divide by is called the divisor, and the result is called the quotient. For example, in the division $12 \div 4 = 3$, 12 is the dividend, 4 is the divisor, and 3 is the quotient.

Steps to Divide Large Numbers

i. Arrange the numbers: Write the dividend inside the division bracket (or long division symbol) and the divisor outside.

ii. Divide the first digit of the dividend by the divisor.

iii. Multiply the divisor by the quotient.

iv. Subtract the result from the dividend.

v. Bring down the next digit from the dividend and repeat the process.

vi. Continue until all digits in the dividend are used. The final number is the quotient, and if there's any leftover value, it is the remainder.

Properties of Division

Division by 1: Any number divided by 1 remains the same.

Example: $5 \div 1 = 5$.

Division by 0: Division by 0 is undefined. You cannot divide by zero.

Example: $6 \div 0$ is not possible.

Commutative Property Does Not Apply: Division is not commutative. Changing the order of the numbers will not give the same result.

Example: $6 \div 2 \neq 2 \div 6$.

Example 1

Question: Divide 3,756 by 6.

Solution:

Step 1: Divide the first digit, 3, by 6. Since 3 is less than 6, we move to the next two digits, 37.

Step 2: 37 ÷ 6 = 6 (since 6 × 6 = 36). Write 6.

Step 3: Subtract 36 from 37, leaving a remainder of 1. Bring down the next digit (5).

Step 4: 15 ÷ 6 = 2 (since 6 × 2 = 12). Write 2.

Step 5: Subtract 12 from 15, leaving a remainder of 3. Bring down the last digit (6).

Step 6: 36 ÷ 6 = 6 (since 6 × 6 = 36). Write 6.

Step 7: Subtract 36 from 36, leaving a remainder of 0. So, the quotient is 626.

Answer: 3,756 ÷ 6 = 626

Example 2

Question: Divide 4,892 by 4.

Solution:

Step 1: Divide 48 by 4. 48 ÷ 4 = 12. Write 12.

Step 2: Subtract 48 from 48, leaving a remainder of 0. Bring down the next digit (9).

Step 3: $9 \div 4 = 2$ (since $4 \times 2 = 8$). Write 2.

Step 4: Subtract 8 from 9, leaving a remainder of 1. Bring down the last digit (2).

Step 5: 12 ÷ 4 = 3 (since 4 × 3 = 12). Write 3.

Step 6: Subtract 12 from 12, leaving a remainder of 0. So, the quotient is 1,223.

Answer: 4,892 ÷ 4 = 1,223

Summary Points

- Division involves splitting a number into equal parts.
- □ The divisor divides the dividend, and the quotient is the result.
- □ Use long division steps: divide, multiply, subtract, and bring down the next digit.
- Division is not commutative, and division by 0 is not possible.
- □ Understanding place value is important when dividing large numbers.