DIVISION
Notes

Let us revise the basic properties of division which we have learnt in previous classes.

1. If the dividend is zero and the divisor is a non-zero number, the quotient is zero.

For Example : 0 ÷ 4 = 0

0 ÷ 35 = 0

0 ÷ 125 = 0

2. If the divisor is 1 and dividend is an any number, the quotient is the same number as the dividend.

For Example : 26 ÷ 1 = 26

8 ÷ 1 = 8

330 ÷ 1 = 330

3. If the dividend and the divisor are the same non-zero numbers, the quotient is 1.

For Example : 5 ÷ 5 = 1

21 ÷ 21 = 1

225 ÷ 225 = 1

DIVISION BY 10, 100 AND 1000

Observe the following table carefully :

Division	Same as	Quotient	Remainder
4324 ÷ 1	4324 ones ÷ 1 ones	4324	0
4324 ÷ 10	432 tens 4 ones ÷ 1 tens	432	4
4324 ÷ 100	43 hundreds 24 ones ÷ 100	43	24
4324 ÷ 1000	4 thousands 324 ones ÷ 1000	4	324

DIVISION BY 10, 100 AND 1000

From the table, we conclude that :

1. **If we divide a number by 10, we get a quotient by removing ones digit of the number and ones digit is a remainder.**

For Example :

24	÷	10	=	Quotient 2, Remainder 4
245	÷	10	=	Quotient 24, Remainder 5
2457	÷	10	=	Quotient 245, Remainder 7

DIVISION BY 10, 100 AND 1000

From the table, we conclude that :

2. If we divide a number by 100, we get a quotient by removing ones and tens digits. The number formed by ones and tens digits is the remainder.

For Example : 324 ÷ 100 = Quotient 3, Remainder 24

3456 ÷ 100 = Quotient 34, Remainder 56

DIVISION BY 10, 100 AND 1000

From the table, we conclude that :

3. If we divide a number by 1000, we get a quotient by removing ones, tens and hundreds digits. The number formed by the removed digits is the remainder.

For Example : 2456 ÷ 1000 = Quotient 2, Remainder 456

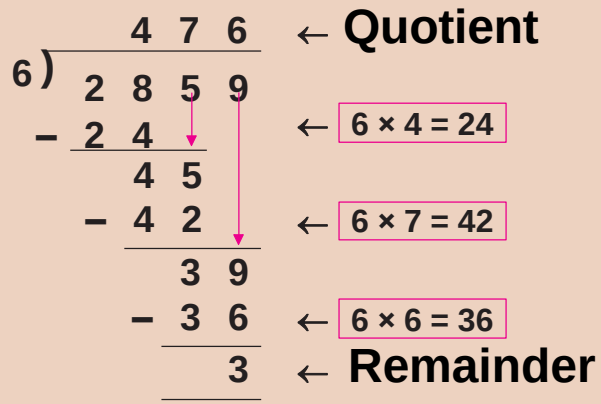
37858 ÷ 1000 = Quotient 37, Remainder 858

572585 ÷ 1000 = Quotient 572, Remainder 585

DIVISION BY 1-DIGIT NUMBER

EXAMPLE : Divide 2859 by 6.

SOLUTION :



∴ Quotient = 476

and Remainder = 3.

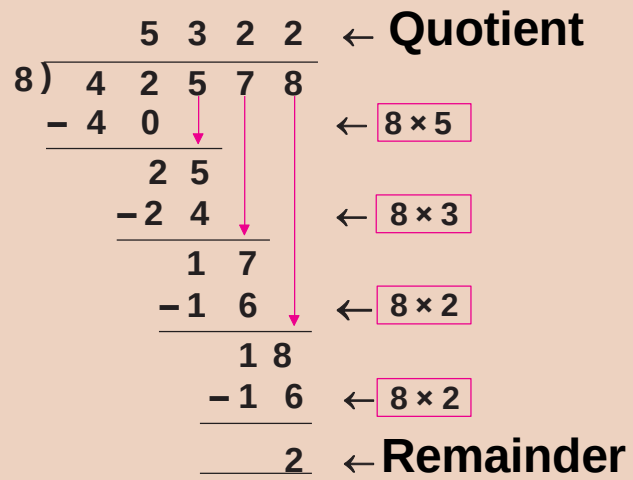
Steps

1. The left-most digit is 2 which is less than 6. So, we can't divide 2 by 6. Take the next digit also.
2. Divide 28 by 6.
   We have 28 > 24 and 28 < 30.
   Thus, 6 goes 4 times in 28.
3. Subtract to get 28 – 24 = 4, which is the remainder.
4. Bring down 5 making 45.
   6 goes 7 times in 45, i.e. 6 × 7 = 42.
   Subtract 42 from 45 to get
   45 – 42 = 3, which is the remainder.
5. Bring down 9 making 39.
   6 goes 6 times in 39, i.e. 6 × 6 = 36.
   Subtract to get 39 – 36 = 3, which is the remainder.

DIVISION BY 1-DIGIT NUMBER

EXAMPLE : Divide 42578 by 8.

SOLUTION :



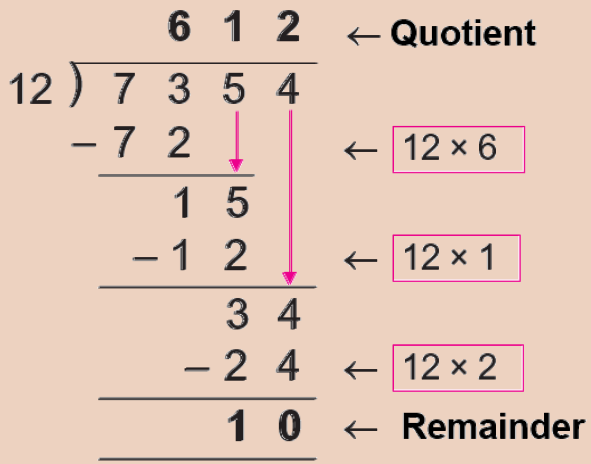
Steps

1. Take 42 and divide it by 8.
2. 8 goes 5 times in 42, i.e. 8 × 5 = 40.
3. Subtract to get 42 – 40 = 2, which is the remainder.
4. Bring down 5 making 25.
5. 8 goes 3 times in 25, i.e. 8 × 3 = 24.
6. Subtract to get 25 – 24 = 1 as the remainder
7. Bring down 7 making 17.
8. 8 goes 2 times in 17, i.e. 8 × 2 = 16.
9. Subtract to get 17 – 16 = 1 as the remainder
10. Bring down 8 making 18.
11. 8 goes 2 times in 18, i.e. 8 × 2 = 16.
12. Subtract to get 18 – 16 = 2 as the remainder.

DIVISION BY 2-DIGIT NUMBER

EXAMPLE 3 : Divide 7354 by 12.

SOLUTION :



Steps

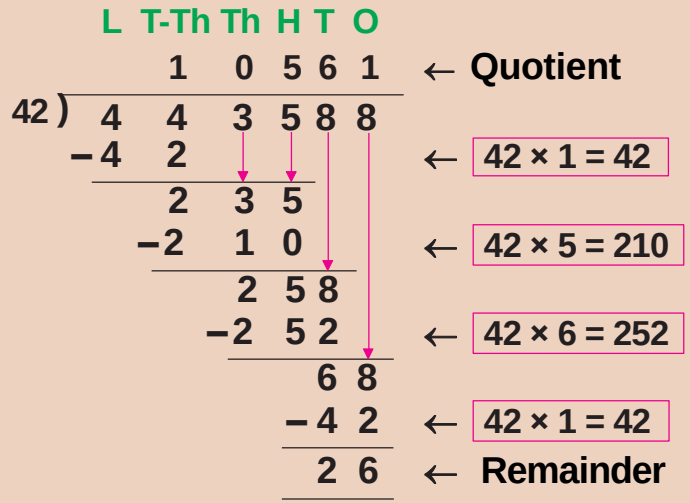
1. Divisor is of two digits.
2. Start the division by taking two digits from the extreme left of the dividend i.e. 73.
3. Divide 73 by 12.
4. 12 goes 6 times in 73, i.e. 12 × 6 = 72.
5. Subtract to get 73 – 72 = 1.
6. Bring down 5 making 15.
7. Divide 15 by 12.
8. 12 goes 1 time in 15, i.e. 12 × 1 = 12
9. Subtract to get 15 – 12 = 3 (remainder)
10. Bring down 4 making 34.
11. Divide 34 by 12 ; 12 goes 2 times in 34, i.e. 12 × 2 = 24.
12. Subtract to get 34 – 24 = 10 as the remainder.

Hence, 7354 ÷ 12 gives 612 as the quotient and 10 as the remainder.

DIVISION BY 2-DIGIT NUMBER

EXAMPLE : Divide 443588 by 42.

SOLUTION :



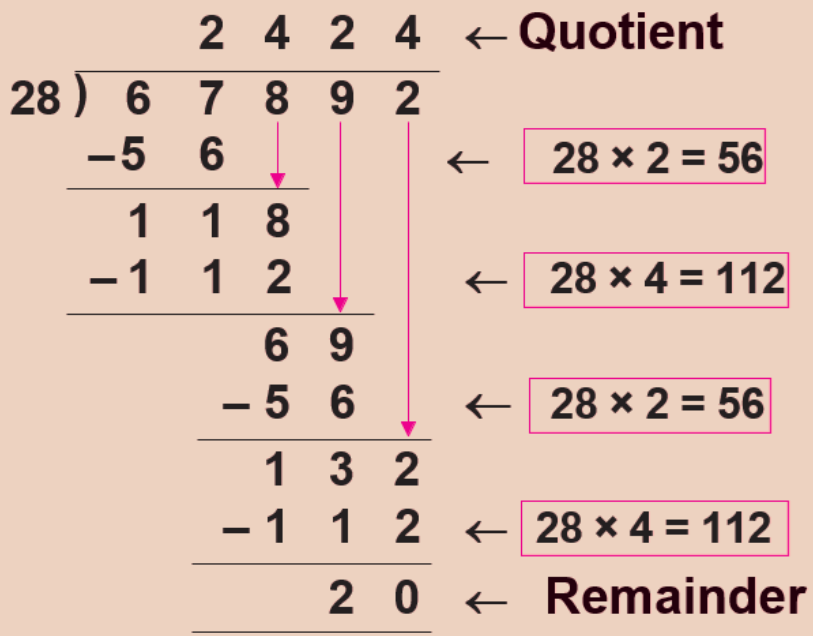
Steps

1. Divisor is of two digits.
2. Start the division by taking two digits from the extreme left of the dividend i.e. 73.
3. Divide 73 by 12.
4. 12 goes 6 times in 73, i.e. 12 × 6 = 72.
5. Subtract to get 73 – 72 = 1.
6. Bring down 5 making 15.
7. Divide 15 by 12.
8. 12 goes 1 time in 15, i.e. 12 × 1 = 12
9. Subtract to get 15 – 12 = 3 (remainder)
10. Bring down 4 making 34.
11. Divide 34 by 12 ; 12 goes 2 times in 34, i.e. 12 × 2 = 24.
12. Subtract to get 34 – 24 = 10 as the remainder.

DIVISION BY 2-DIGIT NUMBER

EXAMPLE : Solve 67892 ÷ 28 and check the answer.

SOLUTION :



Thus, 67892 ÷ 28 gives 2424 as the quotient and 20 as the remainder.

VERIFICATION

Here, dividend = 67892, divisor = 28,
quotient = 2424, remainder = 20

Dividend = quotient × divisor + remainder

= 2424 × 28 + 20 = 67872 + 20

= 67892 (dividend)

∴ the division is checked and it is correct.

2424 ← Quotient
× 28 ← Divisor
19392
48480
67872
+ 20 ← Remainder
67892 ← Dividend

PROBLEMS ON DIVISION

EXAMPLE : A cycle dealer bought 29 cycles for ₹ 4379. Find the price of 1 cycle.

SOLUTION : To find the price of 1 cycle, we need to divide ₹ 4379 by 29.

```
      151
   ------
29 ) 4379
     -29
     ---
      147
     -145
     ----
       29
      -29
      ---
        0
      ---
```

Thus, the price of a cycle is ` 151.

PROBLEMS ON DIVISION

EXAMPLE : 15050 mangoes are packed in 43 boxes. How many mangoes are packed in a box ?

SOLUTION : Number of mangoes packed in 43 boxes = 15050. Number of mangoes packed in a box = 15050 ÷ 43 = 350

```
   350
43)15050
  -129
  ----
    215
   -215
   ----
      0
```

Therefore, 350 mangoes are packed in a box.

PROBLEMS ON DIVISION

EXAMPLE : The cost of 25 pens is ₹ 531 and 25 P. Find the cost of a pen.

SOLUTION : To find the cost of a pen, we divide ₹ 531 and 25 P by 25.

Also, ₹ 531 and 25 P = 531 × 100 P + 25 P

= 53100 P + 25 P = 53125 P

Now, we divide 53125 P by 25. i.e. 53125 P ÷ 25 = 2125 P

Thus, the cost of a pen = 2125 P = ₹ 21, 25 P = ₹ 21.25

Hence, the cost of a pen is ₹ 21.25.

TEST OF DIVISIBILITY

Without actual division, we can check whether the given number is exactly divisible by 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12. Study the table carefully.

TEST OF DIVISIBILITY

For Number	Rule/Condition	Examples
2	A number is divisible by 2, if its last digit (i.e. ones digit) is even or zero.	4324, 2866, 4560, 378 are all divisible by 2.
3	A number is divisible by 3, if the sum of its digits is divisible by 3.	3369, 879, 2181 are all divisible by 3.
4	A number is divisible by 4, if the number formed by its right-most two digits is divisible by 4.	408, 316, 824, 9328 are all divisible by 4.
5	A number is divisible by 5, if its last digit (i.e. ones digit) is either 0 or 5.	205, 325, 2990, 3265 are all divisible by 5.

TEST OF DIVISIBILITY

For Number	Rule/Condition	Examples
6	A number is divisible by 6, if the number is divisible by 2 as well as 3.	186, 492, 834, 3204 are all divisible by 6.
7	A number is divisible by 7, if the difference between twice the last digit (i.e. ones digit) and the number formed by other digits is either 0 or a multiple of 7.	2975, 1617, 392, 889 Consider 889 : Last digit = 9 Now, 88 – 18 = 70 (divisible by 7). Hence, 889 is divisible by 7.
8	A number is divisible by 8, if the number formed by its right-most three digits are divisible by 8.	2168, 4328, 1008 are all divisible by 8.
9	A number is divisible by 9, if the sum of the digits is divisible by 9.	225, 729, 1287 are all divisible by 9.

TEST OF DIVISIBILITY

For Number	Rule/Condition	Examples
10	A number is divisible by 10, if its ones digit is 0.	340, 1150, 2000 are all divisible by 10.
11	A number is divisible by 11, if the difference between the sums of its alternate digits is either 0 or a multiple of 11.	5016, 2794, 8261 etc. In 8261, sum of digits in even places = 2 + 1 = 3 and sum of digits in odd places = 8 + 6 = 14. Difference (14 – 3) is 11. ∴ 8261 is divisible by 11.
12	A number is divisible by 12, if the given number is exactly divisible by 3 and 4.	1200, 3852, etc. In 1200 : 1200 ÷ 3 = 400 1200 ÷ 4 = 300 So, 1200 is divisible by 12. In 3852 : Divisibility of 3 3 + 8 + 5 + 2 = 18 ÷ 3 = 6 Divisibility of 4 : 52 ÷ 4 = 13 So, 3852 is divisible by 12.