G D GOENKA PUBLIC SCHOOL, MORENA

SUBJECT – MATHEMATICS

GRADE – 3

Unit – 10 Money

Conversion of Rupees into Paise

As we know 1 Rupee = 100 Paise
To convert rupees into paise we have to multiply the number of rupees by 100

Example 1. Convert ₹ 45 into Paise

Solution. ₹ 45 = 45 X 100 = 4500 Paise

Example 2. Convert Rs 25.75 into paise

Solution. ₹ 25.75 = ₹ 25 + 75 P = 25X100P + 75P = 2500 + 75 = 2575 P

Another easy method, remove the point/dot and write 'P' at the end.
So, ₹ 25.75 = 2575P

Conversion of Paise into Rupees

Example 1. Convert 425p to rupees and paise.

Solution. 425p = 400p + 25p

= ₹ 4 + 25p

= ₹ 4.25

Example 2. Convert 5665p to rupees and paise

Solution. 5665p = 5600p + 65p

= ₹ 56 + 65p

= ₹ 56.65

Addition of Money Without Carry

Example 1. Add ₹ 35.20 and ₹ 5.25

Solution. Arrange the numbers in tabular format as shown below

Rs. (Rupees)				P (Paise)		
	1					Add the paise
	3	5	.	2	0	20p + 25p = 45p
+		5	.	2	5	Add the rupees
	4	0	.	4	5	Rs. 35 + Rs. 5 = Rs. 40

So, the result is ₹ 40.45

Example 2. Add ₹ 432.22 to ₹ 147.65

Solution. Arrange the numbers in tabular format as shown below.

Rs					P		
							Add the paise
	4	3	2	.	2	2	22p + 65p = 87p
+	1	4	7	.	6	5	Add the rupees
	5	7	9	.	8	7	Rs. 432 + Rs. 147 = Rs. 579

So, the result is ₹ 579.87.

Addition of Money With Carry

Example 1. Add ₹ 86.57 and ₹ 52.66

Solution. Arrange the numbers in tabular format as shown below.

Rs.				P	
	1	1		1	
	8	6	.	5	7
+	5	5	.	6	6
1	4	2	.	2	3

Add the paise first

57p + 66p = 123p = 100p + 23p (100p = ₹ 1)

= ₹ 1 + 23p

23p to remain in paisa field.

Add the rupees now ₹ 86 + ₹ 55 + ₹ 1 = ₹ 142

So, the result is ₹ 142.23

Example 2. Add ₹ 132.45, ₹ 623.32 and ₹ 28.47

Solution. Arrange the numbers in tabular format as shown below.

Rs					P	
		1	1		1	
	1	3	2	.	4	5
	6	2	3	.	3	2
+		2	8	.	4	7
	7	8	4	.	2	4

So, the result is ₹ 784.24.

Subtraction of Money Without Borrow

Example 1. Subtract Rs. 234.23 from 987.56

Solution. Arrange the numbers in tabular format as shown below.

	Rs				P	
	9	8	7	.	5	6
-	2	3	4	.	2	3
	7	5	3	.	3	3

Subtract the paise first

56p – 23p = 33p

Then subtract the rupees

₹ 987 – ₹ 234 = ₹ 753

So, the result is ₹ 753.33

Subtraction of Money With Borrow

Let’s see an example to understand the process of subtraction with borrow.

Example 1. Subtract 242.35 from 353.21

Solution. Arrange the numbers in tabular format as shown below.
Method 1.

	Rs				P	
	3	5	2	.	2	1
-	2	4	2	.	3	5
	1	1	0	.	8	6

Subtract the paise first

As 35p > 21p, borrow Rs 1 from 353.

1 rupee + 21p = 121 paise

121p – 35p = 86p

Write 86p below Paise column

Earlier ₹ 1 was borrowed from 353 then ₹ 352 remained. Subtract 242 from 352

	Rs				P	
	3	5	2	.	2	1
-	2	4	2	.	3	5
	1	1	0	.	8	6

₹ 352 – ₹ 242 = ₹ 110

Write ₹ 110 below rupees column.

So, the answer is ₹ 110.86.

Method 2
Arrange the amount to be subtracted under the larger amount in a column such that dots fall in a column as shown below.

	Rs				P	
	3	5	3	.	2	1
-	2	4	2	.	3	5
	1	1	0	.	8	6

Subtract the amounts like ordinary numbers and put a dot in the result dot's column.

Multiplication of Money by a Number

Example 1. Multiply ₹ 24 by 5

Solution.

Rs.	2	4
	X	5
1	2	0

So, the result is ₹ 120

Example 2. Multiply Rs. 9.52 by 5

Solution.

Rs.	9	.5	2
		X	5
4	7	.6	0

So, the result is Rs. 47.60

Example 3. Multiply Rs. 15.12 by 12

Solution.

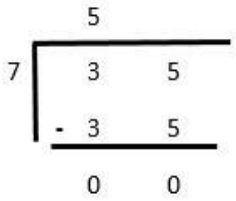
Rs.	1	5	.1	2
		X	1	2
	3	0	2	4
1	5	1	2	
1	8	1	.4	4

So, the answer is Rs. 181.44.

Division of Money by a Number

Example 1. Divide Rs. 35 by 7

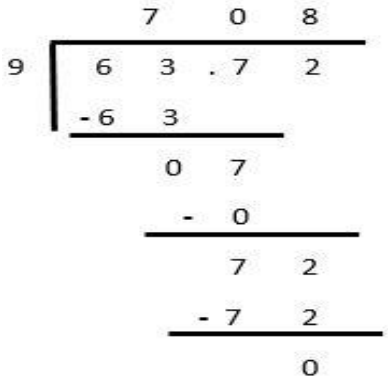
Solution.



So, the answer is 5.

Example 2. Divide 63.72 by 9

Solution.



So, the answer is Rs. 7.08

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SUBJECT – MATHEMATICS

GRADE – 3

Unit – 8 Measurement

Important points

1. The standard unit of length is 'Meter'.
2. We use 'cm' for centimeter, 'mm' for millimeter, 'm' for meter and 'km' for kilometer in short form.
3. 1 centimeter length is equally divided into 10 small parts and each part is called millimeter (mm).

Thus, 1 cm = 10 mm or 10 mm = 1 cm

4. 1 meter length is equally divided into 100 small parts and each part is called centimeter (cm).

Thus, 1 m = 100 cm or 100 cm = 1 m

5. 1 kilometer length is equally divided into 1000 small parts and each part is called meter (m).

Addition and Subtraction of units of length

Arrange the number in column according to the units. First add smaller unit then add larger unit.

Example 1:

Add 24m 14cm and 35m 13cm

	m	cm
	24	14
+	35	13
	59	27

Example 2:

Subtract 14m 13cm from 35m 13cm

	m	cm
	35	13
-	14	13
	21	00

Example 3:

A shopkeeper had 250m long rope. 190m was sold. What is the length of the rope left?

Solution:

Length of rope = 250m

Length of rope sold =190m

Length of rope left = 250m – 190m

$$\begin{array}{r} {}^{1}\not{2}\,{}^{1}5\ 0\ \text{m} \\ -\ 1\ 9\ 0\ \text{m} \\ \hline 0\ 6\ 0\ \text{m} \end{array}$$

Conversions:

To convert meters into centimeters, we multiply the given number of meters by 100.

Example 1: Convert 5m into cm

5m = 5 x 100

= 500cm

Example 2: Convert 4m 85cm into cm

4m 85cm = 4 x 100cm + 85cm

= 400cm + 85 cm = 485 cm

To convert kilometers into meters, we multiply the given number of kilometers by 1000.

Example 1: Convert 15km into m

15m = 15 x 1000

= 15000m

Example 2: Convert 4km 850m into m

4km 850m =4 x 1000m + 850m

= 4000m + 850m

= 4850m

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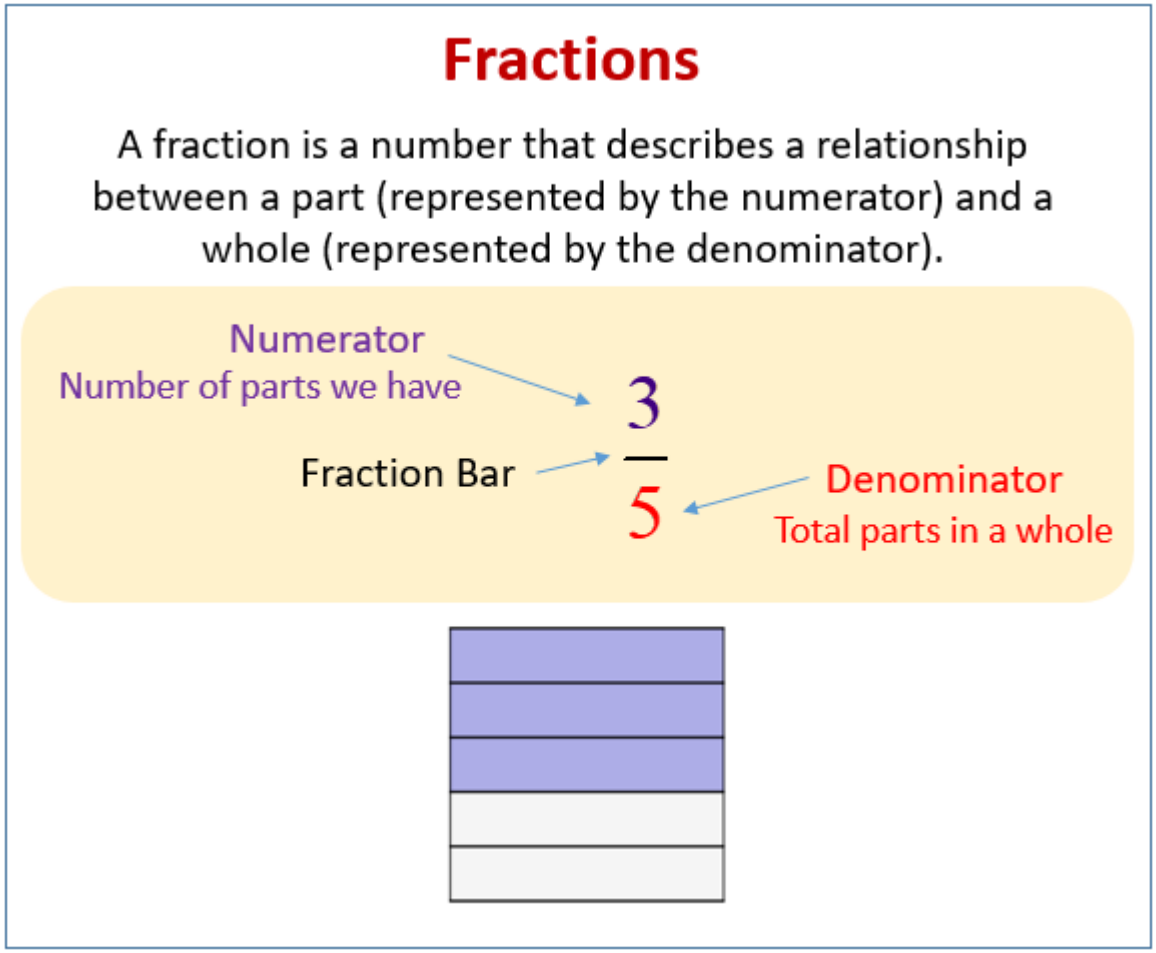
SUBJECT – MATHEMATICS

GRADE – 3

Unit – 7 Fraction



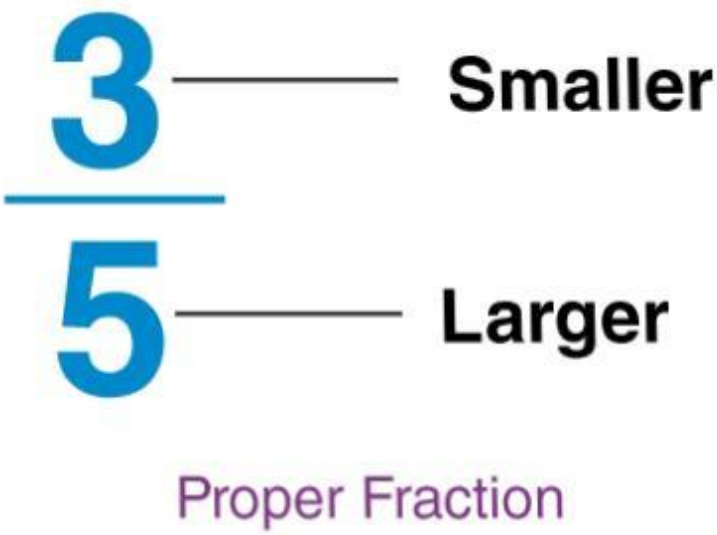
Types of Fraction

Proper Fraction

A fraction where the numerator is less than the denominator, then it is known as a proper fraction.

i.e., Numerator < Denominator

For example,



Proper Fraction

Note:

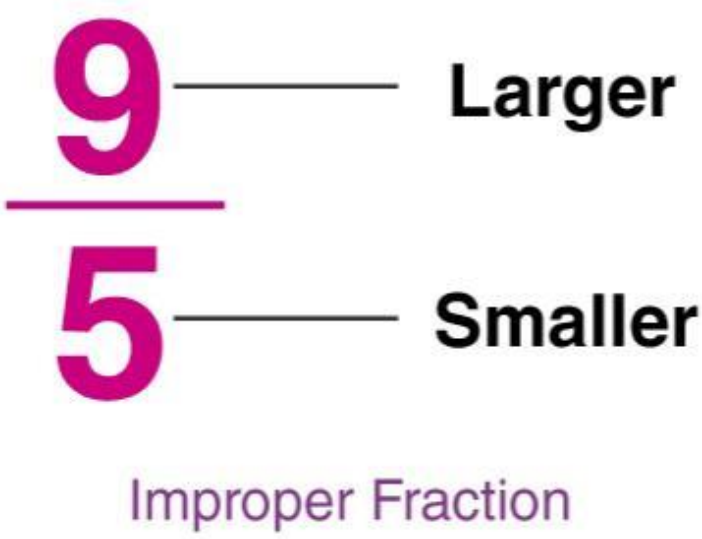
- The value of proper fraction after further simplification is always less than 1.

Improper Fraction

A fraction where the numerator is greater than the denominator, then it is known as an improper fraction.

i.e., Numerator > Denominator

For example,



Note:

- All the natural numbers can be represented in the form of fractions, where the denominator is always equal to 1.
- The simplification of improper fraction results in the value which is equal or greater than 1, but not less than 1.

Like Fractions

The fractions which have the same denominators are called like fractions.

For example 1/2, 3/2, 5/2, 7/2 are like fractions.

The simplification of such fractions is easy, as all the denominators here are the same. Suppose we need to add all the above like fractions, then;

1/2 + 3/2 + 5/2 + 7/2 = (1+3+5+7)/2 = 16/2 = 8

Unlike Fractions

The fractions which have unequal denominators or different denominators are called, unlike fractions.

For example 1/2, 1/3, 1/4, 1/5, are unlike fractions.

Simplication for such fractions is a little lengthy method since we need to factorise the denominator first and then simplify them (in case of addition and subtraction).

- Suppose, we have to add 1/2 and 1/3. Then first we will find the LCM of 2 and 3 which is equal to 6.
- Now we need to multiply 1/2 by 3 and 1/3 by 2, both in numerator and denominator.
- The fractions become 3/6 and 2/6.
- Now if we add 3/6 and 2/6, we get;
- 3/6+2/6 = 5/6

Equivalent Fractions

When two or more fractions have the same result after simplification for which they represent the same portion of the whole, then such fractions are equal to each other and are called equivalent fractions.

For example, 1/2 and 2/4 are equivalent.

1/3 and 3/9 are equivalent.

Examples

Let us see some examples here based on the fraction’s types.

- Examples of Proper Fractions: 2/3, 2/4, 2/5, 1/2. 4/7, 7/9, etc. (Numerator < Denominator)
- Examples of Improper Fractions: 3/2, 4/2, 5/2, 7/4, 9/7, 8/5, etc. (Numerator > Denominator)

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SUBJECT – MATHEMATICS

GRADE – 3

Unit – 6 Division

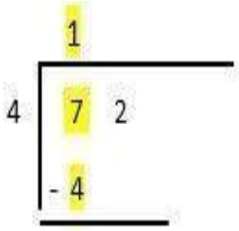
2-Digits Division

Example 1. 72 ÷ 4

Solution.
Step 1.
Start with tens place first.

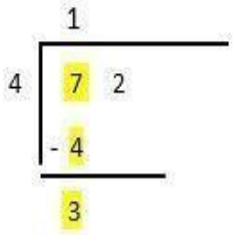
7 tens ÷ 4 = 1 ten

Write 1 ten above 7.



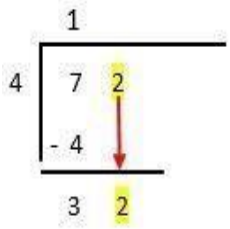
Step 2. Subtract 4 from 7.

7 tens – 4 tens = 3 tens



Step 3.
Bring down 2 from ones place.

3 tens + 2 ones = 32



Step 4.

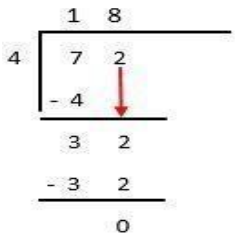
Divide 32 by 4. In other words, we must find out in 4's table, where 32 comes.

4 X 8 = 32

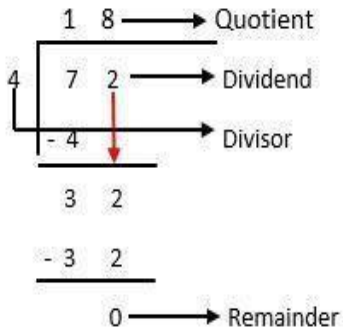
32 ÷ 4 = 8
8 goes to the ones place. Subtract 32 from 32.

32 – 32 = 0

So, 72 ÷ 4 = 18



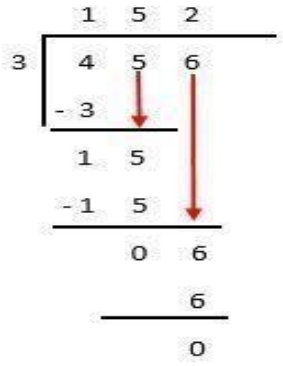
Here 72 is known as dividend, 4 is known as divisor and 18 is known as quotient.



3-Digits Division

It is similar to the 2-digit division. Let's have a look at some examples.
Example 1. 456 ÷ 3

Solution.



Step 1.

Start with hundreds place first.

4 hundreds ÷ 3 = 1 hundred

Write 1 hundred above 4.

Step 2.

Subtract 3 from 4.

4 hundreds – 3 hundreds = 1 hundreds

Step 3.

Bring down 5 from tens place.

1 hundreds + 5 tens = 10 tens + 5 tens = 15 tens

Divide 15 by 3. In other words, we must find out in 3’s table, where 15 comes.

3 X 5 = 15

15 ÷ 3 = 5

5 goes to the tens place of quotient. Subtract 15 from 15 i.e. 15 – 15 = 0

Step 4.

Bring down 6 from ones place of dividend.

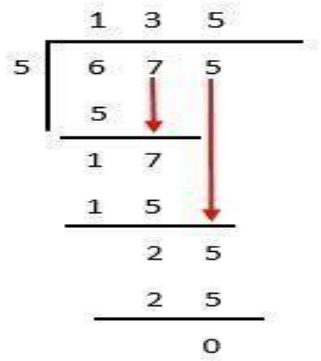
6 ÷ 3 = 2

2 goes to the ones place of quotient.

So, 456 ÷ 3 = 152

Example 2. 675 ÷ 5

Solution.



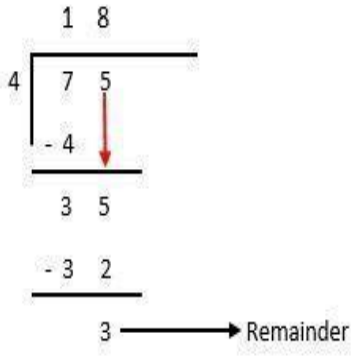
So, the answer is 135.

Division With Remainder

Let's assume we have 6 chocolates and we have to divide it among 5 children equally. If we give one chocolate to each child, then 5 chocolates will be over, and 1 chocolate will remain with us. Let's go through some examples given below.

Example 1. 75 ÷ 4

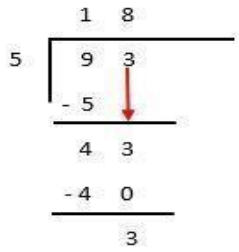
Solution.



Here 75 is dividend, 4 is divisor, 18 is quotient and 3 is remainder.

Example 2. 93 ÷ 5

Solution.

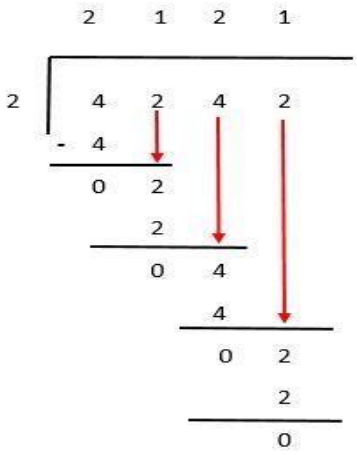


Here 93 is dividend, 5 is divisor, 18 is quotient and 3 is remainder.

4-digit Divison

Example 1. Divide 4242 by 2.

Solution



First divide thousands place.

4 thousands ÷ 2 = 2 thousands

We write 2 in thousands place in the quotient.

Next divide hundreds place

2 hundreds ÷ 2 = 1 hundreds

We write 1 in hundreds place in the quotient.

Next divide tens place

4 tens ÷ 2 = 2 tens

We write 2 in tens place in the quotient.

Next divide ones place

2 ones ÷ 1 = 1 ones

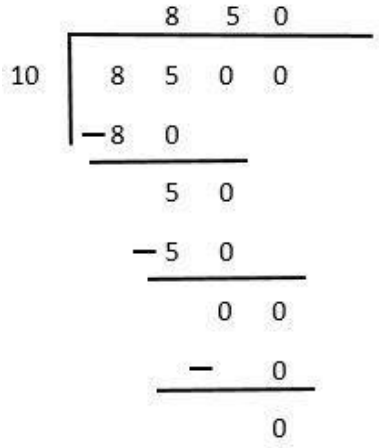
We write 1 in once place in the quotient.

So, 4242 ÷ 2 = 2121.

Division by 10

Example 1. Divide 8500 by 10

Solution.



Quotient = 850

Remainder = 0

Example 2. Divide 96758 by 10

Solution.

```
          9   6   7   5
      ┌──────────────────
10    │ 9   6   7   5   8
      │−9   0
      │ ──────
          6   7
        −6   0
        ──────
              7   5
            −7   0
            ──────
                  5   8
                −5   0
                ──────
                      8
```

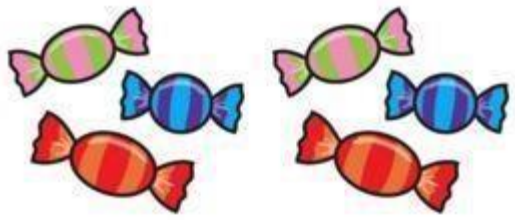
Quotient = 9675

Remainder = 8

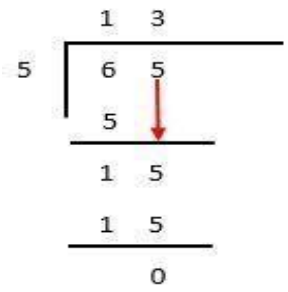
Word Problem

In our day to day life division is used to solve different problems. Let's have a look at some examples.

Example 1. Divide 65 chocolates among 5 girls. How many chocolates each girl will get?



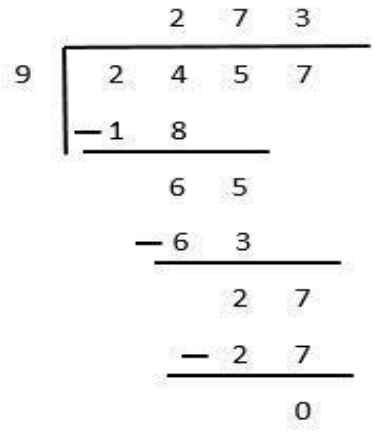
Solution. Total number of chocolates = 65
Number of girls = 5
Each girl will get = Total number of chocolates ÷ Number of girls
= 65 ÷ 5



Each girl will get 13 chocolates.

Example 2 There are 9 students in a classroom, and the class teacher has 2457 chocolates with him. How many chocolates each student will get?

Solution. In order to find the number of chocolates each student will get, we have to divide 2457 by 9.



Thus, each student will get 273 chocolates.

CHECKING DIVISON

Divide 94 by 3 and verify the answer.

Step I: Write 94 inside and the bracket and 3 on the left side of the bracket.

Thus, quotient = 31
remainder = 1

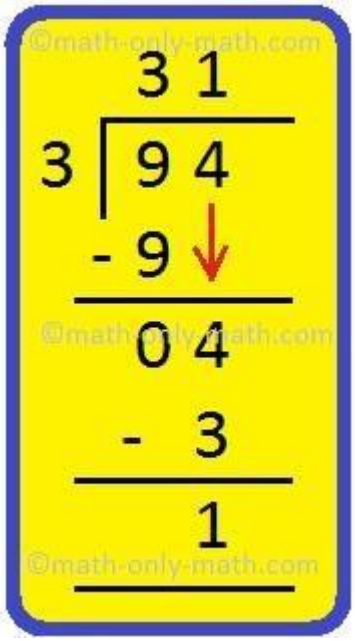
Step II: Start division from left to right, Divide 9 tens by 3.

We know that 3 × 3 = 9

Write 3 in the quotient and 9 below 9. Subtract 9 from 9.

Step III: Bring down 4 from ones place. 3 goes into 4, 1 time and gives 1 as remainder.

Write 1 in the quotient and subtract 3 from 4.



Check: To check answer, we use the following relationship:

Dividend = Divisor × Quotient + Remainder

94 = 3 × 31 + 1

94 = 93 + 1

94 = 94

Hence, division is correct.

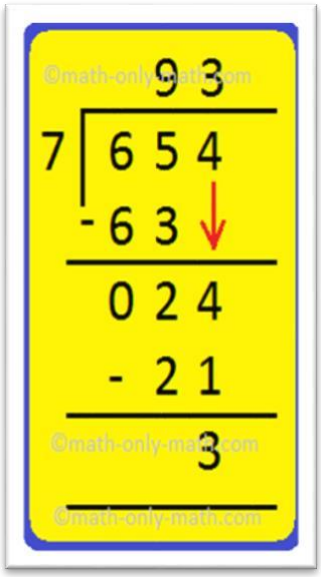
4. Divide 654 by 7 and verify the answer.

Step I: Write 654 inside the bracket and 7 on the left side of the bracket.

Step II: The divisor 7 is greater than 6. So, consider first two digits 65. 7 goes into 65, 9 times and gives 2 as remainder.

Step III: 24 is the new dividend. 7 goes into 24, 3 times and gives 3 as remainder.

Write the quotient 3 and subtract 321 from 24.



Thus, quotient = 93 and remainder = 3

Check: To check answer, we use the following relationship:

Dividend = Divisor × Quotient + Remainder

654 = 7 × 93 + 3

654 = 651 + 3

654 = 654

Hence, division is correct.

Therefore, to check a division sum, add the remainder to help product of divisor and quotient. The result should be equal to the dividend.