Operations with Decimals

Addition of Decimal numbers

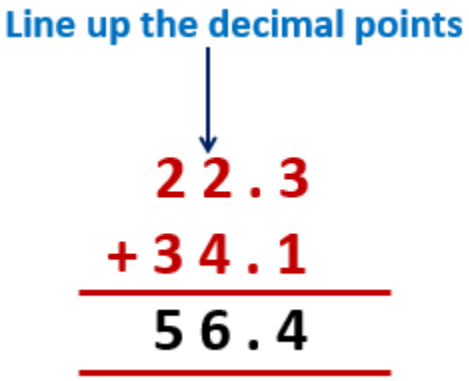
To add the decimal numbers we can add them as whole numbers but the decimal will remain at the same place as it was in the given numbers. It means that we have to line up the decimal point in each number while writing them, and then add them as a whole number.

Example: 1

Add 22.3 and 34.1

Solution:

Write the numbers as given below, and then add them.

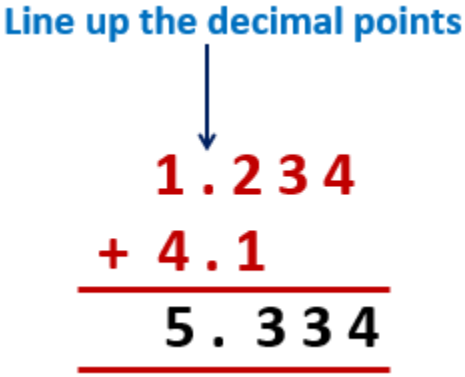


Example: 2

Add 1.234 and 4.1.

Solution:

There are three numbers after decimal in one number and one number after decimal in another number. So we should not get confused and write the numbers by lining up the decimal points of both the numbers, then add them.



Another way is to write the numbers in the place value chart, so that it will be easy to identify, how to write numbers.

	Ones (1)	Tenths (1/10)	Hundredths (1/100)	Thousandths (1/1000)
+	4	1	0	0
=	5	3	3	4

Subtraction of Decimal Numbers

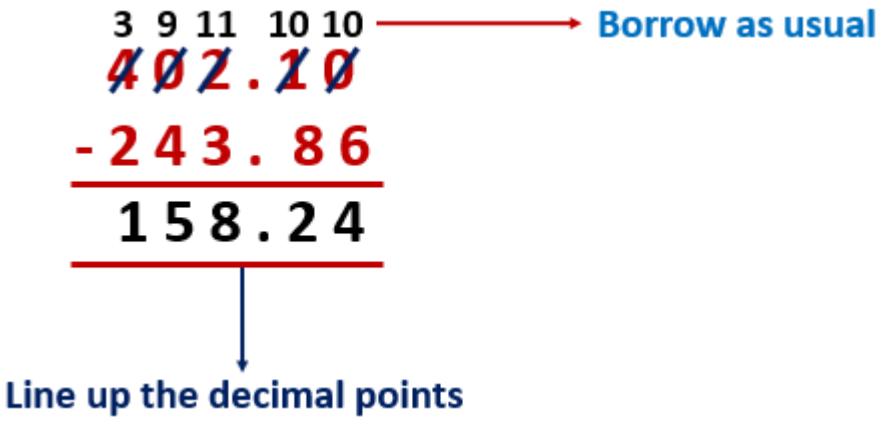
Subtraction is also done as normal whole numbers after lining up the decimals of the given number.

Example

Subtract 243.86 from 402.10.

Solution

- Write the numbers in a line so that the decimal points of both the numbers lined up.
- Then subtract and borrow as we do in whole numbers.
- Line up the decimal point in the answer also.



Multiplication of Decimal Numbers

1. How to multiply a decimal number with a whole number?

If we have to multiply the whole number with a decimal number then we will multiply them as normal numbers but the decimal place will remain the same as it was in the original decimal number.

Example

35 × 3.45 = 120.75

Here we have multiplied the number 35 with 345 as normal whole numbers and we put the decimal at the same place from the right as it was in 3.45.

2. How to multiply Decimal numbers by 10,100 and 1000?

a. If we have to **multiply a decimal number by 10** then we will transfer the decimal point to the right by one place.

Example

5.37 × 10 = 53.7

b. If we have to **multiply a decimal number by 100** then we will transfer the decimal point to the right by two places.

Example

5.37 × 100 = 537

c. If we have to **multiply a decimal number by 1000** then we will transfer the decimal point to the right by three places.

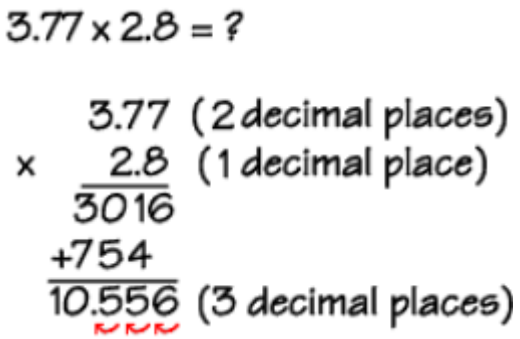
Example

5.37 × 1000 = 5370

3. How to multiply a decimal number by another decimal number?

To multiply a decimal number with another decimal number we have to multiply them as the normal whole numbers then put the decimal at such place so that the number of decimal place in the product is equal to the sum of the decimal places in the given decimal numbers.

Example



Division of Decimal Numbers

1. How to divide a decimal number with a whole number?

If we have to divide the whole number with a decimal number then we will divide them as whole numbers but the decimal place will remain the same as it was in the original decimal number.

Example

12.96 ÷ 4 = 3.24

Here we divide the number 1296 with 4 as normal whole numbers and we put the decimal at the same place from the right as it was in 12.96.

2. How to divide Decimal numbers by 10,100 and 1000?

a. If we have to **divide a decimal number by 10** then we will transfer the decimal point to the left by one place.

Example

5.37 ÷ 10 = 0.537

b. If we have to **divide a decimal number by 100** then we will transfer the decimal point to the left by two places.

Example

253.37 × 100 = 2.5337

c. If we have to **divide a decimal number by 1000** then we will transfer the decimal point to the left by three places.

Example

255.37 × 1000 = 0.25537

3. How to divide a decimal number by another decimal number?

To divide a decimal number with another decimal number

- First, we have to convert the denominator as the whole number by multiplying both the numerator and denominator by 10, 100 etc
- Now we can divide them as we had done before.

Example

$$\frac{83.48}{2.4} = \frac{83.48}{2.4} \times \frac{10}{10} = \frac{834.8}{24} = 34.75$$