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Decimal : Addition-Subtraction

The teacher has made a place value chart on the blackboard and wrote two decimal numbers 47.69 and 78.36 on the blackboard.

Tens	Ones	.	Tenths	Hundredths
4	7	.	6	9

47.69

78.36

Teacher—Vinod, fill the digit of the first

number written on the blackboard at the appropriate places in the chart.

Vinod — There will be 4 at the tens place, 7 at the ones place, 6 at the tenths place and 9 at the hundredths place.

Teacher—Well done! Farida now you fill the digits of the second number in the chart at the appropriate places.

Farida— There will be 7 at tens place, 8 at ones place, 3 at tenths place and 6 at hundredths place.

Teacher—Very good! You know that we compare the decimal numbers just like whole numbers. Rajan can you tell that which is the greater number between 47.69 and 78.36 ?

Rajan — Yes sir, 78.36 is greater than 47.69. It can also be shown like this $78.36 > 47.69$.

Teacher—Very good! How did you do ?

Rajan — First I compared the digits at tens places like before. 7 is greater than 4 hence 78.36 will be greater than 47.69.

Teacher—Now, Rahul you tell me that which is the greater number between 243.73 and 243.13 ?

Rahul — Sir, here all the digits before decimal are equal. How will we find out which is the greater number ?

Teacher—When we compare such decimal numbers in which all the digits before decimal are equal, then we compare the tenths digit, hundredths



digit and so on. Rahul tell in both the numbers which digits are at the tenths place.

Rahul – Sir, 7 in the first number and 1 in the second number are at the tenths place.

Teacher—Well done! $7 > 1$

Hence, number $243.73 > 243.13$



Do it yourself-

In the given decimal fractions which fraction is greater –

- (a) 13.05 and 13.50 (b) 137.39 and 138.39 (c) 412.69 and 412.68

Ascending - Descending Order

We already know, arranging two or more given numbers in increasing order is known as ascending order and arranging them in decreasing order is known as descending order. Let's arrange the decimal fraction numbers in ascending and descending order. –

15.05, 4.382, 10.24, 17.5, 4.40

Ascending order – $4.382 < 4.40 < 10.24 < 15.05 < 17.5$

Descending order – $17.5 > 15.05 > 10.24 > 4.40 > 4.382$



Do it yourself -

- Write the given numbers in ascending order—

(i) 2.258, 2.25, 3.4, 4.7

(ii) 47.21, 49.46, 39.88, 31.98

- Write the given numbers in descending order—

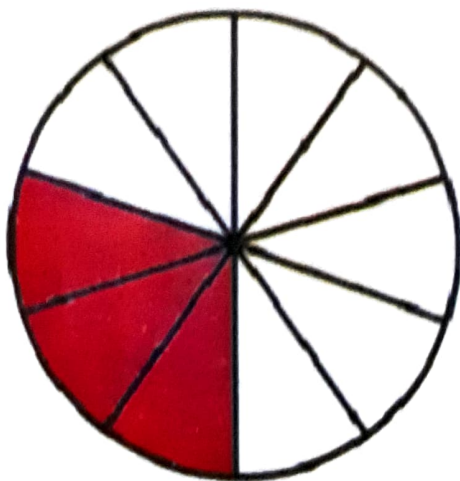
(i) 78.44 , 71.21, 70.987, 79.46

(ii) 296.07, 293.09, 499.89, 691.98



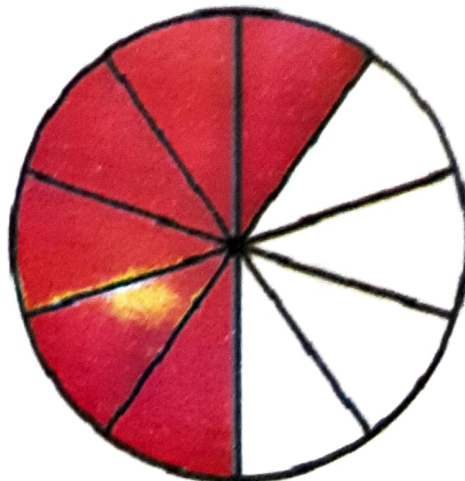
Addition of Decimal Numbers-

Figure 1



0.3 (coloured part)

Figure 2



0.6 (coloured part)

Both the circles are of the same size. Each has been divided into ten equal parts. In figure (1) 0.3 part is coloured whereas in figure (2) 0.6 part is coloured.

Let's see that how many coloured parts are there in both the figures –

$$0.3 + 0.6 \quad \text{or} \quad 0.3$$

$$\begin{array}{r} + 0.6 \\ \hline 0.9 \end{array}$$

Decimal point is written just below the decimal point in addition. Again in sum also the decimal point is written below the decimal point.



Do it yourself -

- How many total white parts are there in both the shown figures above. Add in decimals and tell the answer.



Similarly –

$$2.57 = 2 \text{ ones} + 5 \text{ tenths} + 7 \text{ hundredths}$$

$$3.45 = 3 \text{ ones} + 4 \text{ tenths} + 5 \text{ hundredths}$$

As we add or subtract by writing ones just under ones, tens just under tens, in the same way write tenths just under tenths, hundredths just under hundredths, thousandths just under thousandths then add or subtract.



Do it yourself-

$$\bullet \quad 15.045$$

$$+13.012$$

$$\bullet \quad 8.87$$

$$+8.48$$

$$\bullet \quad 115.35$$

$$+82.14$$

Let's see this too—

$$2.063$$

There are three digits just after the decimal in the number.

$$+ 5.43$$

There are only two digits just after the decimal in the number.

$$2.063$$

$$+ 5.430$$

Here, zero is added to make the numbers of digits equal after the decimal.

$$7.493$$

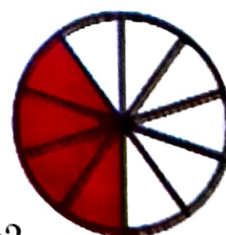
Subtraction of Decimal Numbers-

This figure has been divided into 10 equal parts.

Coloured parts in the form of fraction $\rightarrow \frac{\boxed{}}{\boxed{}} = 0.4$

White parts in the form of fraction $\rightarrow \frac{\boxed{}}{\boxed{}} = 0.6$

How much more is the white part than the coloured part?



$$0.6$$

$$- 0.4 \quad (\text{we write decimal just below the decimal})$$

$$0.2 \quad (\text{zero decimal two})$$

When there is no digit before the decimal, we write zero before the decimal. The value doesn't change by writing zero.



Let's solve this too—



Do it yourself-

$$\begin{array}{r} 8.05 \\ - 6.78 \\ \hline 1.27 \end{array} \quad \text{(we write decimal just below the decimal)}$$

$$\begin{array}{r} 4.67 \\ - 2.65 \\ \hline \end{array}$$

$$\begin{array}{r} 17.71 \\ - 10.85 \\ \hline \end{array}$$

$$\begin{array}{r} 10.32 \\ - 4.135 \\ \hline \end{array}$$

Word problem

Example : 1 Ajay bought one medicine for ₹ 18.45 and another medicine for ₹ 17.85 from Janta medicals. How many rupees did Ajay give to the shopkeeper?

Solution : Cost of the first medicine = ₹ 18.45

Cost of the second medicine = + ₹ 17.85

Total cost of both the medicines = ₹ 36.30

Hence, Ajay gave total ₹ 36.30 to the shopkeeper.

Example : 2 Under the midday meal scheme, a primary school gets ₹ 4.13 and an upper primary school gets ₹ 6.18 for to spend on one child. Find out how many rupees less the primary school gets than the upper primary school ?

Solution : Amount received by upper primary school per child ₹ 6.18

Amount recieved by primary school per child ₹ 4.13

We have to find out that how many rupees less the primary school gets per child than the upper primary school.

To find out this we will subtract—

$$\begin{array}{r} ₹ 6.18 \\ - ₹ 4.13 \\ \hline ₹ 2.05 \end{array}$$

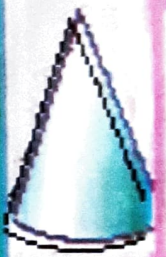
Hence, primary school gets ₹ 2.05 less than the upper primary school.

We have been learnt

- To solve the questions of addition and subtraction by arranging the decimal numbers.



Exercise



1. Which is greater –

(a) 1.95 , 3.85

(b) 11.71 , 11.11

(c) 3.757 , 3.755

(d) 41.145 , 41.154

2. Write in ascending order –

(a) 2.43, 3.59, 1.78, 5.76

(b) 28.173, 28.17, 24.459, 25.453

3. Write in descending order –

(a) 7.91, 7.89, 8.53, 6.95

(b) 41.135, 43.351, 43.43, 45.63

4. Add –

(a) 3.458

(b) 15.76

(c) 13.007

+8.469

+76.15

+17.038

5. Subtract –

(a) 9.17

(b) 6.639

(c) 14.46

–7.17

–4.539

–12.15

6. The milk was distributed in a primary school and an upper primary school. If 6.60 litres of milk was given to the primary school and 8.80 litres to the upper primary school, total how many litres of milk was distributed ?

7. Rampur market is 12.5 km away from Ramesh's house. Deepak's house is also on the same route at the distance of 7.25 km from Ramesh's house. What is the distance of Rampur market from Deepak's house ?