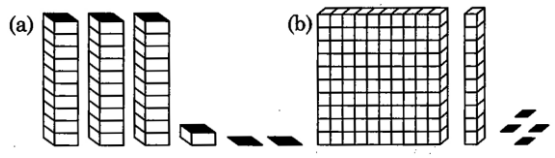
NCERT Exercises (Questions-Solutions)

Exercise 8.1

Page No. 167

1. Write the following as numbers in the given table.



Tans Ones Tenths Hundreds Tens Tenths

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)

Sol. In figure (a), there are 3 towers (each of tens units), one block of unit and 2 small parts (each equal to ones-tenths).

So, in table these can be written asHundreds Tens Ones Tenths

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)
0	3	1	2

(b) In figure (b), there is 1 tower (each of hundreds units), 1 tower(each of tens units) and no block (each of one unit) but 4 parts(each of ones-tenths).

So, in table these can be written as

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)
1	1	0	4

Page No. 168

2. Write the following decimals in the place value table.

(a) 19.4 **(b) 0.3**

(c) 10.6 **(d) 205.9**

Sol. We can write the given decimals as follows:

(a) We have, $19.4 = \boxed{1} \times 10 + \boxed{9} \times 1 + \boxed{4} \times \frac{1}{10}$

Now, putting these values in place value table, we get

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)
0	1	9	4

(b) Wehave, $0.3 = \boxed{0} \times 10 + \boxed{0} \times 1 + \boxed{3} \times \frac{1}{10}$

Now, putting these values in place value table, we get

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)
0	0	0	3

(c) Wehave, $10.6 = \boxed{1} \times 10 + \boxed{0} \times 1 + \boxed{6} \times \frac{1}{10}$

Now, putting these values in place value table, we get

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)
0	1	0	6

(d) We have,

$$205.9 = \boxed{2} \times 100 + \boxed{0} \times 10 + \boxed{5} \times 1 + \boxed{9} \times \frac{1}{10}$$

Now, putting these values in place value table, we get

Hundreds	Tens	Ones	Tenths
(100)	(10)	(1)	(1/10)
2	0	5	9

3. Write each of the following as decimals.
(a) Seven-tenths
(b) Two-tens and nine-tenths
(c) Fourteen point six
(d) One hundred and two ones
(e) Six hundred point eight

Sol. (a) Seven-tenths $= 7 \times \frac{1}{10} = \frac{7}{10} = 0.7$

(b) Two-tens and nine-tenths $= 2 \times 10 + 9 \times \frac{1}{10}$

$= 20 + \frac{9}{10} = 20 + 0.9 = 20.9$

(c) Fourteen point six = 14.6

(d) One hundred and two ones $= 1 \times 100 + 0 \times 10 + 2 \times 1$

$= 100 + 0 + 2 = 102$

(e) Six hundred point eight =600.8

4. Write each of the following as decimals.

(a) $\frac{5}{10}$ **(b)** $3+\frac{7}{10}$ **(c)** $200+60+5+\frac{1}{10}$ **(d)** $70+\frac{8}{10}$

(e) $\frac{88}{10}$ **(f)** $\frac{2}{10}$ **(g)** $\frac{3}{2}$ **(h)** $\frac{2}{5}$

(i) $\frac{12}{5}$ **(j)** $3\frac{3}{5}$ **(k)** $4\frac{1}{2}$

Sol. (a) We have, $\frac{5}{10}$

Here, it has 5 tenths.

i.e. $5\times\frac{1}{10}=\frac{5}{10}=0.5$

(b) We have, $3+\frac{7}{10}$

Here, it has 3 ones and 7 tenths.

i.e. $3+\frac{7}{10}=3+0.7=3.7$

(c) We have, $200+60+5+\frac{1}{10}$

Here, it has 2 hundreds, 6 tens, 5 ones and one-tenths.

i.e. $2\times100+6\times10+5\times1+1\times\frac{1}{10}$

$=200+60+5+\frac{1}{10}=265+0.1=265.1$

(d) We have, $70+\frac{8}{10}$

Here, it has 7 tens, 0 ones and 8 tenths.

i.e. $7\times10+0\times1+8\times\frac{1}{10}=70+\frac{8}{10}=70+0.8=70.8$ (e) We have $\frac{88}{10}=8\frac{8}{10}=8+\frac{8}{10}$

Here, it has 8 ones and 8 tenths.

i.e. $8\times1+8\times\frac{1}{10}=8+0.8=8.8$

(f) We have, $\frac{2}{10}$

Here, it has only 2 tenths.

i.e. $2\times\frac{1}{10}=\frac{2}{10}=0.2$

(g) We have, $\frac{3}{2}=1\frac{1}{2}=1+\frac{1}{2}$

Here, it has one ones but tenths is not complete.

On multiplying by 5 in its numerator and denominator of $\frac{1}{2}$, weget

$1+\frac{1}{2}=1+\frac{1\times5}{2\times5}=1+\frac{5}{10}$

Here, it has 1 ones and 5 tenths.

i.e. $1\times1+5\times\frac{1}{10}=1+0.5=1.5$

(h) We have, $\frac{2}{5}$. To make this fraction in tenths, we have to multiplyby 2 in its numerator and denominator both.

$\therefore \quad \frac{2}{5}=\frac{2\times2}{5\times2}=\frac{4}{10}$

Here, it has 4 tenths.

i.e. $\frac{4}{10}=0.4$

(i) We have, $\frac{12}{5}$. To make this fraction in tenths, we have tomultiply by 2 in its numerator and denominator both.

$\therefore \quad \frac{12}{5}=\frac{12\times2}{5\times2}=\frac{24}{10}=2\frac{4}{10}=2+\frac{4}{10}$

Here, it has 2 ones and 4 tenths.

i.e. $2\times1+4\times\frac{1}{10}=2+\frac{4}{10}=2+0.4=2.4$

(j) We have, $3\frac{3}{5}=3+\frac{3}{5}$. To make this fraction in tenths, we have tomultiply by 2 in its numerator and denominator of 3/5.

$\therefore \quad 3+\frac{3\times2}{5\times2}=3+\frac{6}{10}$

Here, it has 3 ones and 6 tenths.

i.e. $3\times1+6\times\frac{1}{10}=3+\frac{6}{10}=3+0.6=3.6$

(k) We have, $4\frac{1}{2}=4+\frac{1}{2}$. To make this fraction in tenths, we have tomultiply by 5 in its numerator and denominator of 1/2.

$\therefore \quad 4+\frac{1\times5}{2\times5}=4+\frac{5}{10}$

Here, it has 4 ones and 5 tenths.

i.e. $4\times1+5\times\frac{1}{10}=4+\frac{5}{10}=4+0.5=4.5$

5. Write the following decimals as fractions. Reduce thefractions to lowest form.

(a) 0.6 **(b)2.5** **(c) 1.0** **(d) 3.8**

(e) 13.7 **(f) 21.2** **(g) 6.4**

TIPS

Firstly, write the given decimal into fraction with denominator 10 and then simplify traction to write in lowest form i.e. numerator anddenominator have no common factor other than 1.

Sol. (a) We have, $0.6=0+\frac{6}{10}=\frac{6}{10}$

Lowest form $= \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$ [$\because$ HCF of 6 and 10 = 2]

$\therefore$ Fraction of $0.6 = \frac{6}{10}$ and lowest form $= \frac{3}{5}$

(b) We have, $2.5 = 2 + \frac{5}{10} = \frac{2 \times 10}{1 \times 10} + \frac{5}{10}$

[multiplying by 10 in numerator and denominator of 2]

$= \frac{20}{10} + \frac{5}{10} = \frac{20 + 5}{10} = \frac{25}{10}$

Lowest form $= \frac{25 \div 5}{10 \div 5} = \frac{5}{2}$ [$\because$ HCF of 25 and 10 = 5]

$\therefore$ Fraction of $2.5 = \frac{25}{10}$ and lowest form $= \frac{5}{2}$

(c) We have, $1.0 = 1 + \frac{0}{10} = 1 + 0 = 1$

$\therefore$ Fraction of 1.0 as well as lowest form = 1

(d)We have, $3.8 = 3 + \frac{8}{10} = \frac{3 \times 10}{1 \times 10} + \frac{8}{10}$

[multiplying by 10 in numerator and denominator of 3]

$= \frac{30}{10} + \frac{8}{10} = \frac{30 + 8}{10} = \frac{38}{10}$

Lowest form $\frac{38 \div 2}{10 \div 2} = \frac{19}{5}$ [$\because$ HCF of 38 and 10 = 2]

$\therefore$ Fraction of $3.8 = \frac{38}{10}$ and lowest form $= \frac{19}{5}$

(e)We have, $13.7 = 13 + \frac{7}{10} = \frac{13 \times 10}{1 \times 10} + \frac{7}{10}$

[multiplying by 10 in numerator and denominator of 13]

$= \frac{130}{10} + \frac{7}{10} = \frac{130 + 7}{10} = \frac{137}{10}$

Lowest form $\frac{137 \div 1}{10 \div 1} = \frac{137}{10}$ [$\because$ HCF of 137 and 10 = 1]

$\therefore$ Fraction of $13.7 = \frac{137}{10}$ and lowest form $= \frac{137}{10}$

(f) We have, $21.2 = 21 + \frac{2}{10} = \frac{21 \times 10}{1 \times 10} + \frac{2}{10}$

[multiplying by 10 in numerator and denominator of 21]

$= \frac{210}{10} + \frac{2}{10} = \frac{210 + 2}{10} = \frac{212}{10}$

Lowest form $= \frac{212 \div 2}{10 \div 2} = \frac{106}{5}$ [$\because$ HCF of 212 and 10 = 2]

$\therefore$ Fraction of $21.2 = \frac{212}{10}$ and lowest form $= \frac{106}{5}$

(g) We have, $6.4 = 6 + \frac{4}{10} = \frac{6 \times 10}{1 \times 10} + \frac{4}{10}$

[multiplying by 10 in numerator and denominator of 6]

$= \frac{60}{10} + \frac{4}{10} = \frac{60+4}{10} = \frac{64}{10}$

Lowest form $= \frac{64 \div 2}{10 \div 2} = \frac{32}{5}$ [$\because$ HCF of 64 and 10 = 2]

$\therefore$ Fraction of $6.4 = \frac{64}{10}$ and lowest form $= \frac{32}{5}$

6. Express the following as cm using decimals.

(a) 2 mm **(b)30mm**

(c) 116 mm **(d) 4 cm 2 mm**

(e) 162 mm **(f) 83 mm**

TIPS

As we know that,

$10mm = 1cm \Rightarrow 1mm = \frac{1}{10}cm$

To convert mm into cm, we use tenths i.e. multiply given mm by 1/10 cm.

Sol. (a) We know that,

$10mm = 1cm \Rightarrow 1mm = 1/10cm$

$\therefore\ 2mm = 2 \times \frac{1}{10}cm = \frac{2}{10}cm = 0.2cm$

(b) We know that,

$10mm = 1cm \Rightarrow 1mm = \frac{1}{10}cm$

$\therefore\ 30mm = 30 \times \frac{1}{10}cm = \frac{30}{10}cm = 3cm$

(c) We know that,

$10mm = 1cm \Rightarrow 1mm = \frac{1}{10}cm$

$\therefore\ 116mm = 116 \times \frac{1}{10}cm$

$= \frac{116}{10}cn = 11\frac{6}{10}cm = \left(11 + \frac{6}{10}\right)cm$

$= (11 + 0.6)cm = 11.6cm$

(d) We know that,

$10mm = 1cm \Rightarrow 1mm = \frac{1}{10}cm$

$\therefore\ 4cm2mm = 4cm + 2mm$

$= 4cm + 2 \times \frac{1}{10}cm = 4cm + \frac{2}{10}cm$

$= (4 + 0.2)cm = 4.2cm$

(e) We know that,

$10mm = 1cm \Rightarrow 1mm = \frac{1}{10}cm$

$\therefore$

$162mm = 162 \times \frac{1}{10}cm = \frac{162}{10}cm = 16\frac{2}{10}cm = \left(16 + \frac{2}{10}\right)cm$

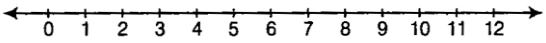
$= (16 + 0.2)cm = 16.2cm$

(f) We know that, $10mm = 1cm \Rightarrow 1mm = 1cm$

$\therefore\ 83mm = 83 \times \frac{1}{10}cm = \frac{83}{10}cm = 8\frac{3}{10}cm = \left(8 + \frac{3}{10}\right)cm$

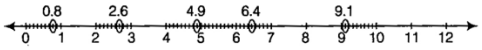
$= (8 + 0.3)cm = 8.3cm$

7. Between which two whole numbers on the number lineare the given numbers lie? Which of these whole numbers isnearer the number?



(a) 0.8 (b) 5.1 (c) 2.6 (d) 6.4 (e) 9.1 (f) 4.9

Sol. Firstly, draw the number line and divide the unit length betweentwo whole numbers into 10 equal parts, each of these equal partsrepresents 0.1 or 1/10. Now, locate the given decimals on this line.

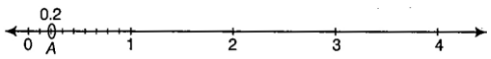


(a) We have, 0.8.
From the above figure, it is clear that number 0.8 lies betweenthe whole numbers 0 and 1.
Hence, number 0.8 is nearer to number 1.
(b) We have, 5.1.
From the above figure, it is clear that number 5.1 lies betweenthe whole numbers 5 and 6.
Hence, number 5.1 is nearer to number 5.
(c) We have, 2.6.
From the above figure, it is clear that number 2.6 lies betweenthe whole numbers 2 and 3.
Hence, number 2.6 is nearer to number 3.
(d) We have, 6.4.
From the above figure, it is clear that number 6.4 lies betweenthe whole numbers 6 and 7.
Hence, number 6.4 is nearer to number 6.
(e) We have, 9.1.
From the above figure, it is clear that number 9.1 lies betweenthe whole numbers 9 and 10.
Hence, number 9.1 is nearer to number 9.
(f) We have, 4.9
From the above figure, it is clear that number 4.9 lies betweenthe whole numbers 4 and 5.
Hencenumber 4.9 is nearer to number 5.
Note A decimal will be nearer to that number from, which it has minimumdistance, e.g. 6.4 lies between 6 and 7 and its distance from 6(distance 4 parts) is minimum than 7 (distance 6 parts).

8. Show the following numbers on the number line.

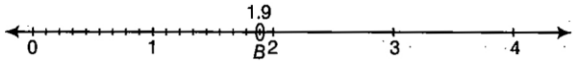
(a) 0.2 (b) 1.9 (c) 1.1 (d) 2.5

Sol. (a) We know that, 0.2 is more than 0 but less than 1. There are2 tenths in it. Divide the unit length between 0 and 1 on thenumber line into 10 equal parts and take 2 parts, whichrepresent 0.2 as shown below on the number line.



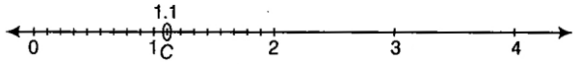
In the figure, point A shows 0.2.

(b) We know that, 1.9 is more than 1 but less than 2. There are oneones and 9 tenths in it. Divide the unit length between 0 and 1, 1and 2 on the number line into 10 equal parts and take 9 parts,which represents 1.9 =(1+0.9) as shown below on the numberline.



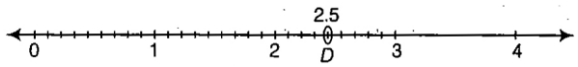
In the figure, point B shows 1.9.

(c) We know that, 1.1 is more than 1 but less than 2. There are oneones and one-tenths in. it. Divide the unit length between 0 and1, 1 and 2 on the number line into 10 equal parts, andtake 1 part which represents 1.1 = (1 + 0.1) as shown below onthe number line.



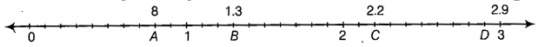
In the figure, point C shows 1.1.

(d) We know that, 2.5 is more than 2 but less than 3. There are 2ones and 5 tenths in it. Divide the unit length between 0 and 1, 1and 2, 2 and 3 into 10 equal parts and take 5 parts, whichrepresents 2.5 = (2 + 0.5) as shown below on the number line.



In the figure, point D shows 2.5.

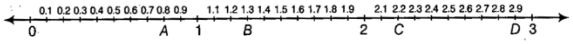
9. Write the decimal number represented by the pointsA, B, C and D on the given number line.



TIPS

To write the decimal numbers represented by given points on thenumber line, we count their distance from 0. Here, each partrepresents 0.1.

Sol. Given number line is as follows



From the figure, it is clear that A = 0.8 as the unit lengthbetween 0 and 1 has been divided into 10 equal parts and 8 partsfrom 0 have been taken.

(ii) From the figure, it is clear that B = 13 as the unit length betweenand 2 has been divided into 10 equal parts and unit lengthbetween 0 to 1 and then 3 parts have been taken.

(iii) From the figure, it is clear that C = 22 as the unit length between 2 and 3 has been divided into 10 equal parts and unit length between 0 to 1,1 to 2 and then 2 parts have been taken.

(iv) From the figure, it is clear that D=29 as the unit length between 2 and 3 has been divided into 10 equal parts and unit length between 0 to 1,1 to 2 and then 9 parts have been taken.

10. (a) The lengthof Ramesh's notebook is 9 cm 5 mm.
What will be its length in cm?
(b) The length of a young gram plant is 65 mm. Express its length in cm.

Sol. (a) Given, length of Ramesh's notebook $k = 9cm5mm$

We know that, $10mm = 1cm \Rightarrow 1mm = \frac{1}{10}cm$

$\therefore$ Length of Ramesh's notebook $k = 9cm5mm$

$= 9cm + 5 \times \frac{1}{10} cm = 9cm + \frac{5}{10} cm$

$= 9cm + 0.5cm = (9 + 0.5)cm = 9.5cm$

(b) Given, length of young gram plant $= 65mm$

We know that, $10mm = 1cm \Rightarrow 1mm = 1/10cm$

$\therefore$ Length of young gram plant $= 65 \times \frac{1}{10} cm = \frac{65}{10} cm$

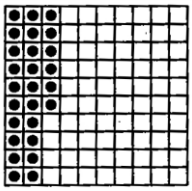
$= 6\frac{5}{10} cm = \left(6 + \frac{5}{10}\right) cm = (6 + 0.5)cm = 6.5cm$

Exercise 8.2

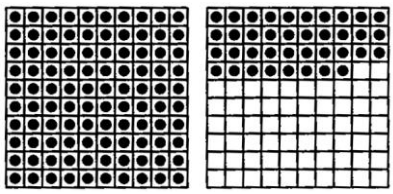
Page No. 173

1. Complete the table with the help of these boxes and usedecimals to write the number.

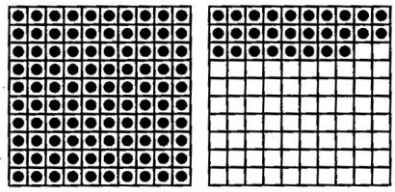
(a)



(b)



(c)



Sol. Here, in each figure, boxes which are given, are is divided into10 rectangles. Each rectangle is divided into 10 small squares. Thus,given box is divided into 100 equal parts.

Here, each rectangle shows 1/10 or one-tenth and each small squareshows 1/100 or one-hundredth.

(a) Here, 2 rectangle and 6 small squares are shaded (or havingdark circles).

So, in decimal it can be written as $2 \times \frac{1}{10} + 6 \times \frac{1}{100} = 0.26$

(b) Here, 1 box, 3 rectangles and 8 small squares are shaded.

So, in decimal it can be written as $1 \times 1 + 3 \times \frac{1}{10} + 8 \times \frac{1}{100} = 1.38$

(c) Here, 1 box, 2 rectangles and 8 small squares are shaded.

So, in decimal it clan be written as $1 \times 1 + 2 \times \frac{1}{10} + 8 \times \frac{1}{100} = 1.28$

Thus, the complete table is given below:

Ones (1)		Tenths (1/10)	Hundredths (1/100)	Number
(a)	0	2	6	0.26
(b)	1	3	8	1.38
(c)	1	2	8	1.28

2. Write the numbers given in the following place valuetable in decimal form.

Hundreds (100)		Tens (10)	Ones (1)	Tenths (1/10)	Hundredths (1/100)	Thousandths (1/1000)
(a)	0	0	3	2	5	0
(b)	1	0	2	6	3	0
(c)	0	3	0	0	2	5
(d)	2	1	1	9	0	2
(e)	0	1	2	2	4	1

Sol. (a) Here,

$$0\times100+0\times10+3\times1+2\times\frac{1}{10}+5\times\frac{1}{100}+0\times\frac{1}{1000}$$

$$=0+0+3+\frac{2}{10}+\frac{5}{100}+0$$

$$=3+\frac{2}{10}+\frac{5}{100}=3+0.2+0.05=3.25$$

(b) Here,

$$1\times100+0\times10+2\times1+6\times\frac{1}{10}+3\times\frac{1}{100}+0\times\frac{1}{1000}$$

$$=100+0+2+\frac{6}{10}+\frac{3}{100}+0=102+\frac{6}{10}+\frac{3}{100}$$

$$=102+0.6+0.03=102.63$$

(c) Here,

$$0\times100+3\times10+0\times1+0\times\frac{1}{10}+2\times\frac{1}{100}+5\times\frac{1}{1000}$$

$$=0+30+0+0+\frac{2}{100}+\frac{5}{1000}$$

$$=30+\frac{2}{100}+\frac{5}{1000}=30+0.02+0.005=30.025$$ (d) Here,

$$2\times100+1\times10+1\times1+9\times\frac{1}{10}+0\times\frac{1}{100}+2\times\frac{1}{1000}$$

$$=200+10+1+\frac{9}{10}+0+\frac{2}{1000}=211+\frac{9}{10}+\frac{2}{1000}$$

$$=211+0.9+0.002=211.902$$

(e) Here,

$$0\times100+1\times10+2\times1+2\times\frac{1}{10}+4\times\frac{1}{100}+1\times\frac{1}{1000}$$

$$=0+10+2+\frac{2}{10}+\frac{4}{100}+\frac{1}{1000}=12+\frac{2}{10}+\frac{4}{100}+\frac{1}{1000}$$
$$=12+0.2+0.04+0.001=12.241$$

Page No. 174

3. Write the following decimals in the place value table.
(a) 0.29 (b) 2.08 (c) 19.60 (d) 148.32
(e) 200.812

Sol. The given decimals can be written as

(a) $0.29=0+\frac{2}{10}+\frac{9}{100}$

(b) $2.08=2+\frac{0}{10}+\frac{8}{100}$

(c) $19.60=10+9+\frac{6}{10}+\frac{0}{100}$

(d) $148.32\times100+40+8+\frac{3}{10}+\frac{2}{100}$

(e) $200.812=200+00+0+\frac{8}{10}+\frac{1}{100}+\frac{2}{1000}$

Now, the place value table is given below:

Decimal number		Hundreds (100)	Tens (10)	Ones (1)	Tenths (1/10)	Hundredths (1/100)	Thousandths (1/1000)
(a)	0.29	0	0	0	2	9	0
(b)	2.08	0	0	2	0	8	0
(c)	19.60	0	1	9	6	0	0
(d)	148.32	1	4	8	3	2	0
(e)	200.812	2	0	0	8	1	2

4. Write each of the following as decimals.
(a) $20+9+\frac{4}{10}+\frac{1}{100}$ **(b)** $137+\frac{5}{100}$ **(c)** $\frac{7}{10}+\frac{6}{100}+\frac{4}{1000}$ **(d)** $23+\frac{2}{10}+\frac{6}{1000}$
(e) $700+20+5+\frac{9}{100}$

Sol. (a)We have,

$$20+9+\frac{4}{10}+\frac{1}{100}=29+4\times\frac{1}{10}\times1\times\frac{1}{100}$$
$$=29+0.4+0.01=29.41$$

(b) We have, $137+\frac{5}{100}$

$= 137 + 0 \times \frac{1}{10} + 5 \times \frac{1}{100} = 137 + 0 + 0.05 = 137.05$

(c) We have, $\frac{7}{10} + \frac{6}{100} + \frac{4}{1000}$

$= 7 \times \frac{1}{10} + 6 \times \frac{1}{100} + 4 \times \frac{1}{1000}$

$= 0.7 + 0.06 + 0.004 = 0.764$

(d) We have,

$23 + \frac{2}{10} + \frac{6}{1000} = 23 + 2 \times \frac{1}{10} + 0 \times \frac{1}{100} + 6 \times \frac{1}{1000}$

$= 23 + 0.2 + 0 + 0.006 = 23.206$

(e) We have, $700 + 20 + 5 + \frac{9}{100}$

$= 725 + 0 \times \frac{1}{10} + 9 \times \frac{1}{100} = 725 + 0 + 0.09 = 725.09$

5. Write each of the following decimals in words.

(a) 0.03 (b) 1.20 (c) 108.56 (d) 10.07

(e) 0.032 (f) 5.008

Sol. Decimals in words are given below:

(a) We have, 0.03 = Zero point zero three

(b) We have, 1.20 = One point two zero

(c) We have, 108.56 = One hundred eight point five six

(d) We have, 10.07 = Ten point zero seven

(e) We have, 0.032 = Zero point zero three two

(f) We have, 5.008 = Five point zero eight

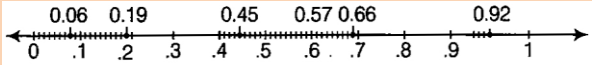
6. Between which two numbers in tenths place on the number line does each of the given number lie?

(a) 0.06 (b) 0.45 (c) 0.19 (d) 0.66

(e) 0.92 (f) 0.57

TIPS

Firstly, draw a number line and divide the unit length between 0 and into 10 equal parts. Each part out of these parts represents 0.1 or one tenths. Again, we divide unit length between two-tenths into 10 equal parts. Each of these part will represent one-hundredths. Then, represent each decimal on number line to find two numbers between on which it lies.



Sol. Given numbers can be represented on number line as given below:

(a) Here, 0.06 is more than 0 but less than 0.1.

So, it lies between 0 and 0.1.

(b) Here, 0.45 is more than 0.4 but less than 0.5.

So, it lies between 0.4 and 0.5.

(c) Here, 0.19 is more than 0.1 but less than 0.2.

So, it lies between 0.1 and 0.2.

(d) Here, 0.66 is more than 0.6 but less than 0.7.

So, it lies between 0.6 and 0.7.
(e) Here, 0.92 is more than 0.9 but less than 1.
So, it lies between 0.9 and 1.
(f) Here, 0.57 is more than 0.5 but less than 0.6.
So, it lies between 0.5 and 0.6.

7. Write as fractions in lowest terms.

(a) 0.60 **(b) 0.05** **(c) 0.75** **(d) 0.18**
(e) 0.25 **(f) 0.125** **(g) 0.066**

TIPS
Firstly, write the given decimal as a fraction with denominator 10,100or 1000 (10 for tenths, 100 for hundredths and 1000 for thousandths) and then divide numerator and denominator by their HCF to write in lowest form.

Sol.

(a) We have, $0.60 = \frac{60}{100} = \frac{60 \div 20}{100 \div 20} = \frac{3}{5}$ [$\because$ HCF of 60 and 100 = 20]

(b) We have, $0.05 = \frac{5}{100} = \frac{5 \div 5}{100 \div 5} = \frac{1}{20}$ [$\because$ HCF of 5 and 100 = 5]

(c) We have, $0.75 = \frac{75}{100} = \frac{75 \div 25}{100 \div 25} = \frac{3}{4}$ [$\because$ HCF of 75 and 100 = 25]

(d) We have, $0.18 = \frac{18}{100} = \frac{18 \div 2}{100 \div 2} = \frac{3}{4}$ [$\because$ HCF of 18 and 100 = 2]

(e) We have, $0.25 = \frac{25}{100} = \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$ [$\because$ HCF of 25 and 100 = 25]

(f) We have, $0.125 = \frac{125}{1000} = \frac{125 \div 125}{1000 \div 125} = \frac{1}{8}$ [$\because$ HCF of 125 and 1000 = 125]

(g) We have, $0.066 = \frac{66}{1000} = \frac{66 \div 2}{1000 \div 2} = \frac{33}{500}$ [$\because$ HCF of 66 and 1000 = 2]

Exercise 8.3

Page No. 175

1. Which is greater?

(a) 0.3 or 0.4 (b) 0.07 or 0.02 (c) 3 or 0.8 (d) 0.5 or 0.05
(e) 1.23 or 1.2 (f) 0.099 or 0.19 (g) 1.5 or 1.50 (h) 1.431 or 1.490
(i) 3.3 or 3.300 (j) 5.64 or 5.603

TIPS
Firstly, write the given decimal in place value term to know about greater in given two decimals. We first compare the whole part and decimal having greater whole part will be greater.

If whole part is same for both, then compare the tenths part anddecimal having greater tenths part will be greater. If tenths part is alsosame, then compare the hundredths part and decimal having greaterhundredths part will be greater.
If hundredths part is same, then compare the thousandths part andfind greater decimal number.

Sol. (a) We have, 0.3 or 0.4

$\therefore 0.3 = 0 + \frac{3}{10}$ and $0.4 = 0 + \frac{4}{10}$

Here, whole part of both numbers are same.

Now, tenths part of $0.3 = \frac{3}{10}$ and tenths part of $0.4 = \frac{4}{10}$

Here, 4 is greater than 3.

$\therefore \frac{4}{10} > \frac{3}{10}$

Hence, 0.4 is greater than 0.3.

(b) We have, 0.07 or 0.02

$\therefore 0.07 = 0 + 0 \times \frac{1}{10} + 7 \times \frac{1}{100}$

and $0.02 = 0 + 0 \times \frac{1}{10} + 2 \times \frac{1}{100}$

Here, whole parts as well as tenths parts of both numbers are same i.e. 0.

Now, hundredths part of $0.07 = \frac{7}{100}$

and hundredths part of $0.02 = \frac{2}{100}$

Here, 7 is greater than $\therefore \frac{7}{100} > \frac{2}{100}$

Hence, 0.07 is greater than 6.02.

(c) We have, 3 or 0.8

$\therefore 3 = 3 + \frac{0}{10} + \frac{0}{100}$ and $0.8 = 0 + \frac{8}{10} + \frac{0}{100}$

Here, whole part of number 3=3

and whole part of number 0.8 = 0

$\because \quad 3 > 0$

Hence, 3 is greater than 0.8.

(d) We have, 0.5 or 0.05

$\therefore 0.5 = 0 + \frac{5}{10}$ and $0.05 = 0 + 0 \times \frac{1}{10} + \frac{5}{100}$

Here, whole parts of both numbers are same i.e. 0.

Now, tenths part of $0.5 = \frac{5}{10}$ and tenths part of $0.05 = \frac{0}{10}$

$\therefore \quad \frac{5}{10} > \frac{0}{10}$

Hence, 0.5 is greater than 0.05.

(e) We have, 1.23 or 1.2

$\therefore 1.23 = 1 + \frac{2}{10} + \frac{3}{100}$ and $1.2 = 1 + \frac{2}{10} + \frac{0}{100}$

Here, whole parts and tenths parts of both numbers are same.

Now, hundredths part of $1.23 = \frac{3}{100}$

and hundredths part of $1.2 = \frac{0}{100}$

$\therefore \quad \frac{3}{100} > \frac{0}{100}$

Hence, 1.23 is greater than 1.2.

(f) We have, 0.099 or 0.19

$\therefore 0.099 = 0 + \frac{0}{10} + \frac{9}{100} + \frac{9}{1000}$

and $0.19 = 0 + \frac{1}{10} + \frac{9}{100} + \frac{0}{1000}$

Here, whole parts of both numbers are same.

Now, tenths part of $0.099 = \frac{0}{10}$ and tenths part of $0.19 = \frac{1}{10}$

$\therefore \quad \frac{1}{10} > \frac{0}{10}$

Hence, 0.19 is greater than 0.099.

(g) We have, 1.5 or 1.50

$\therefore 1.5 = 1 + \frac{5}{10} + \frac{0}{100}$ and $1.50 = 1 + \frac{5}{10} + \frac{0}{100}$

Here, whole parts, tenths parts are well as hundredths parts of both numbers are same.

$\therefore \quad 1.5 = 1.50$

Hence, both numbers are equal.

(h) We have, 1.431 or 1.490

$\therefore \quad 1.431 = 1 + \frac{4}{10} + \frac{3}{100} + \frac{1}{1000}$

and $\quad 1.490 = 1 + \frac{4}{10} + \frac{9}{100} + \frac{0}{1000}$

here, whole parts and tenths parts of both numbers are same.

Now, hundredths part of $1.431 = \frac{3}{100}$

And hundredths part of $1.490 = \frac{9}{100}$

$\therefore \quad \frac{9}{100} > \frac{3}{100}$

Hence, 1.490 is greater than 1.431.

(i) We have, 3.3 or 3.300

$\therefore \quad 3.3 = 3 + \frac{3}{10} + \frac{0}{100} + \frac{0}{1000}$

and $\quad 3.300 = 3 + \frac{3}{10} + \frac{0}{100} + \frac{0}{1000}$

here, whole parts, tenths parts, hundredths part as well as thousandths parts of both numbers are same.

$\therefore$ 3.3 = 3.300

Hence, both numbers are equal.

(j) We have, 5.64 or 5.603

$\therefore \quad 5.64 = 5 + \frac{6}{10} + \frac{4}{100} + \frac{0}{1000}$

and $5.603 = 5 + \frac{6}{10} + \frac{0}{100} + \frac{3}{1000}$

Here, whole parts and tenths parts of both numbers are same.

Now, hundredths part of $5.64 = \frac{4}{100}$

and hundredths part of $5.603 = \frac{0}{100}$

$\therefore \quad \frac{4}{100} > \frac{0}{100}$

Hence, 5.64 is greater than 5.603.

2. Make five more examples and find the greater number from them.

Sol. (i) Let 0.3or 0.8

$\therefore 0.3 = 0 + \frac{3}{10}$ and $0.8 = 0 + \frac{8}{10}$

Here, whole parts of both numbers are same.

Now, tenths part of $0.3 = \frac{3}{10}$ and tenths part of $= 0.8 = \frac{8}{10}$

$\therefore \quad \frac{8}{10} > \frac{3}{10}$

Hence, 0.8 is greater than 0.3.

(ii) Let 0.063 or 0.22

$\therefore \quad 0.063 = 0 + \frac{0}{10} + \frac{6}{100} + \frac{3}{1000}$

and $0.22 = 0 + \frac{2}{10} + \frac{2}{100} + \frac{0}{1000}$

Here, whole parts of both numbers are same.

Now, tenths part of $0.063 = \frac{0}{10}$ and tenths part of $0.22 = \frac{2}{10}$

$\therefore \quad \frac{2}{10} > \frac{0}{10}$

Hence, 0.22 is greater than 0.063.

(iii) Let 3.012 or 2.99

$\therefore \quad 3.012 = 3 + \frac{0}{10} + \frac{1}{100} + \frac{2}{1000}$

and $2.99 = 2 + \frac{9}{10} + \frac{9}{100} + \frac{0}{100}$

here, whole parts and tenths parts of both numbers are same.

Now, hundredths part of $1.34 = \frac{4}{100}$

and hundredths part of $1.39 = \frac{9}{100}$

$\therefore \quad \frac{9}{100} > \frac{4}{100}$

Hence, 1.39 is greater than 1.34.

(v) Let 1.52 and 2.05

$\therefore \quad 1.52 = 1 + \frac{5}{10} + \frac{2}{100}$

and $\quad 2.05 = 2 + \frac{0}{10} + \frac{5}{100}$

Here, whole part of 1.52 = 1 and whole part of 2.05 = 2

$\because \quad 2 > 1$

Hence, 2.05 is greater than 1.52.

Exercise 8.4

Page No. 177

1. **Express as rupees using decimals.**

(a) 5 paise **(b) 75 paise** **(c) 20 paise** **(d) 50 rupees 90 paise**

(e) 725 paise

TIPS

As we know that, 100 paise = ₹1 $\therefore$ 1 paise = ₹ $\frac{1}{100}$ = ₹ 0.01

So, to express paise as rupees, multiply paise by $\frac{1}{100}$ (i.e. hundredths).

Sol. (a) We know that, 1 paise = ₹ $\frac{1}{100}$

$\therefore$ 5paise= ₹ $5 \times \frac{1}{100}$ = ₹ $\frac{5}{100}$ = ₹ 0.05

(b) We know that, 1 paise =₹ $\frac{1}{100}$

$\therefore$ 75 paise = ₹ $75 \times \frac{1}{100} =$ ₹ $\frac{75}{100} =$ ₹ 0.75

(c) We know that, 1 paise = ₹ $\frac{1}{100}$

$\therefore$ 20paise=₹ $20 \times \frac{1}{100} =$ ₹ $\frac{20}{100} =$ ₹0.20

(d) We know that, 1 paise = ₹ $\frac{1}{100}$

$\therefore$ 50 rupees 90 paise = ₹ 50 + 90 paise

=₹50+₹$90\times\frac{1}{100}$=₹ 50+₹$\frac{90}{100}$

=₹ 50+₹ 0.90=₹ (50+0.90)=₹ 50.90

(e) We know that, 1 paise=₹$\frac{1}{100}$

$\therefore$ 725 paise =₹$725\times\frac{1}{100}$=₹$\frac{725}{100}$=₹ 7.25

2. Express as metres using decimals.

(a) 15 cm (b) 6 cm (c) 2 m 45 cm (d) 9 m 7 cm

(e) 419 cm

TIPS

As we know that, $100cm=1m\therefore 1cm=\frac{1}{100}m=0.01m$

So, to express cm as m, multiply cm by $\frac{1}{100}$ (i.e. hundredths).

Sol. (a) We know that, $100cm=1m\Rightarrow 1cm=\frac{1}{100}m$

$\therefore 15cm=15\times\frac{1}{100}m=\frac{15}{100}m=0.15m$

(b) We know that, $1cm=\frac{1}{100}m$

$\therefore 6cm=6\times\frac{1}{100}m=\frac{6}{100}m=0.06m$

(c) We know that, $1cm=\frac{1}{100}m$

$\therefore 2m45cm=2m+45cm=2m+45\times\frac{1}{100}m$

$=2m+\frac{45}{100}m=2m+0.45m=(2+0.45)m=2.45m$ (d) We know that, $1cm=\frac{1}{100}m$

$\therefore 9m7cm=9m+7cm=9m+7\times\frac{1}{100}m$

$=9m+\frac{7}{100}m=(9+0.07)m=9.07m$

(e) We know that, $1cm=\frac{1}{100}m$

$\therefore 419cm=419\times\frac{1}{100}m=\frac{419}{100}m=4.19m$

3. Express as cm using decimals.

(a) 5 mm (b) 60 mm (c) 164 mm (d) 9 cm 8 mm

(e) 93 mm

TIPSwe know that, $10mm = 1cm \therefore 1mm = \frac{1}{10}cm$

So, to express mm as cm, multiply mm by $\frac{1}{10}$ (i.e. tenths)

Sol. (a) We know that, $1mm = \frac{1}{10}cm$

$\therefore 5mm = 5 \times \frac{1}{10}cm = \frac{5}{10}cm = 0.5cm$

(b) We know that, $1mm = \frac{1}{10}cm$

$\therefore 60mm = 60 \times \frac{1}{10}cm = \frac{60}{10}cm = 6.0cm$

(c) We know that, $1mm = \frac{1}{10}cm$

$\therefore 164mm = 164 \times \frac{1}{10}cm = \frac{164}{10}cm = 16.4cm$

(d) We know that, $1mm = \frac{1}{10}cm$

$\therefore 9cm8mm = 9cm + 8mm = 9cm + 8 \times \frac{1}{10}cm$

$= 9cm + \frac{8}{10}cm = \left(9 + \frac{8}{10}\right)cm = (9 + 0.8)cm = 9.8cm$ (e) We know that, $1mm = \frac{1}{10}cm$

$\therefore 93mm = 93 \times \frac{1}{10}cm = \frac{93}{10}cm = 9.3cm$

4. Express as km using decimals.

(a) 8m **(b) 88 m** **(c) 8888 m** **(d) 70 km 5 m**

TIPS

As we know that, $1000m = 1km \therefore 1m = \frac{1}{1000}km = 0.001km$

So, to express m as, km multiply m by $\frac{1}{1000}$ (i.e. thousandths).

Sol. (a) We know that,

$1000m = 1km \Rightarrow 1m = \frac{1}{1000}km$

$\therefore 8m = 8 \times \frac{1}{1000}km = \frac{8}{1000}km = 0.008km$

(b) We know that, $1m = \frac{1}{1000}km$

$\therefore 88m = 88 \times \frac{1}{1000}km = \frac{88}{1000}km = 0.088km$

(c) We know that, $1m = \frac{1}{1000}km$

$\therefore 8888m = 8888 \times \frac{1}{1000} km = \frac{8888}{1000} km = 8.888km$

(d) We know that, $1m = \frac{1}{1000} km$

$\therefore 70km5m = 70km + 5m = 70km + 5 \times \frac{1}{1000} km$

$= 70 \text{ km} + \frac{5}{1000} \text{km} = (70 + 0.005) \text{ km} = 70.005 \text{ km}$

5. Express as kg using decimals.

(a) 2 g (b) 100 g (c) 3750 g (d) 5 kg 8 g

(e) 26 kg 50 g

Sol. (a) We know that,

$1000g = 1kg \Rightarrow 1g = \frac{1}{1000} kg$

$\therefore 2g = 2 \times \frac{1}{1000} kg = \frac{2}{1000} kg = 0.002kg$

(b) We know that, $1g = \frac{1}{1000} kg$

$\therefore 100g = 100 \frac{1}{1000} kg = \frac{100}{1000} kg = 0.1kg$

(c) We know that, $1g = \frac{1}{1000} kg$

$\therefore 3750g = 3750 \times \frac{1}{1000} kg = \frac{3750}{1000} kg = 3.750kg$

(d) We know that, $1g = \frac{1}{1000} kg$

$\therefore 5kg8g = 5kg + 8g = 5kg + 8 \times \frac{1}{1000} kg$

$= 5kg + \frac{8}{1000} kg = (5 + 0.008)kg = 5.008kg$

(e) We know that, $1g = \frac{1}{1000} kg$

$\therefore 26kg50g = 26kg + 50g = 26kg + 50 \times \frac{1}{1000} kg$

$= 26kg + \frac{50}{1000} kg = 26kg + 0.050kg$

$= (26 + 0.050)kg = 26.050kg$

Exercise 8.5

Page No. 179

1. Find the sum in each of the following.

(a) 0.007 +8.5 + 30.08
(b) 15 + 0.632 + 13.8
(c) 27.076 + 0.55 + 0.004
(d) 25.65 + 9.005 + 3.7
(e) 0.75 + 10.425 + 2
(f) 280.69 + 25.2 + 38

TIPS
Firstly, write the given decimals with like terms (i.e. tens, ones, tenths, hundredths, thousandths) one below the other and then, add same as whole numbers.

Sol. (a) We have, 0.007 + 8.5 + 30.08

	Tens	Ones	Tenths	Hundredths	Thousandths
	0	0	0	0	7
	0	8	5	0	0
+	3	0	0	8	0
	3	8	5	8	7

$\therefore 0.007+8.5+30.08=38.587$

(b) We have, 15+0.632+13.8

	Tens	Ones	Tenths	Hundredths	Thousandths
	1	5	0	0	0
	0	8	6	3	2
+	1	3	8	0	0
	2	9	4	3	2

$\therefore 15+0.632+13.8=29.432$

(c) We have, 27.076+0.55+0.004

	Tens	Ones	Tenths	Hundredths	Thousandths
	2	7	0	7	6
	0	0	5	5	0
+	0	0	0	0	4
	2	7	6	3	0

$\therefore 27.076+0.55+0.004=27.630$

(d) We have, 25.65 + 9.005 +3.7

	Tens	Ones	Tenths	Hundredths	Thousandths
	2	5	6	5	0
	0	9	0	0	5
+	0	3	7	0	0
	3	8	3	5	5

$\therefore 25.65+9.005+3.7=38.355$

(e) We have, 0.75+10.425+2

	Tens	Ones	Tenths	Hundredths	Thousandths
	0	0	7	5	0
	0	0	4	2	5
+	0	2	0	0	0
	1	3	1	7	5

$\therefore 0.75+10.425+2=13.175$

(f) We have, 280.69 + 25.2 + 38

	Tens	Ones	Tenths	Hundredths	Thousandths
	2	8	0	6	9
	0	2	5	2	0
+	0	3	8	0	0
	3	4	3	8	9

$\therefore$ 280.69+25.2+38=343.89

2. Rashid spent ₹ 35.75 for Maths book and ₹ 32.60 for Science book. Then, find the total amount spent by Rashid.

Sol. $\because$ Money spent by Rashid for Maths book = ₹ 35.75
and money spent by Rashid for Science book = ₹ 32.60
$\therefore$ Total money spent

$$\begin{array}{r} 35.75 \\ +\ 32.60 \\ \hline 68.35 \end{array}$$

Hence, total money spent by Rashid is₹ 68.35.

3. Radhika's mother gave her ₹10.50 and her father gaveher₹15.80, then find the total amount given to Radhika by the parents.

Sol. $\therefore$ Money given to Radhika by her mother =₹10.50
and money given to Radhika by her father =₹ 15.80
$\therefore$ Total money

$$\begin{array}{r} 10.50 \\ +\ 15.80 \\ \hline 26.30 \end{array}$$

Hence, total money given to Radhika by her parents is ₹ 26.30.

4. Nasreen bought 3 m 20 cm cloth for her shirt and2 m 5 cm cloth for her trouser. Then, find the total length of cloth bought by her.

TIPS
Firstly, write the given length in metre using decimal and then add by putting one below other same as whole numbers.

Sol. Cloth bought by Nasreen for her shirt
= 3 m 20 cm
= 3 m + 20 cm

$$= 3m + 20 \times \frac{1}{100} m \qquad \left[\because 1 \times cm = \frac{1}{100} m\right]$$

$$= 3m + 0.20m = (3 + 0.20)m = 3.20m$$

Cloth bought by Nasreen for her trouser
= 2 m 5 cm = 2 m+ 5 cm

$= 2m + 5 \times \frac{1}{100} m \qquad \left[\because 1cm = \frac{1}{100} m\right]$

$= 2m + 0.05m = (2 + 0.05)m = 2.05m$

$\therefore$ Total cloths

$$\begin{array}{r} 3.20 \\ +\ 2.05 \\ \hline 5.25 \end{array}$$

Hence, total cloths bought by Nasreen is 5.25 m.

5. Naresh walked 2 km 35 m in the morning and 1 km 7 min the evening. How much distance did he walk in all?

TIPS
Firstly, write the given distance into km using decimals and then addby putting one below other same as whole numbers,

Sol. Naresh walked in morning
= 2 km 35 m = 2 km + 35 m

$= 2km + 35 \times \frac{1}{1000} km \qquad \left[\because 1m = \frac{1}{1000} km\right]$

$= 2km + \frac{35}{1000} km = (2 + 0.035)km = 2.035km$

Naresh walked in evening
= 1 km 7 m= 1 km + 7 m

$= 1km + 7 \times \frac{1}{1000} km \qquad \left[\because 1m = \frac{1}{1000} km\right]$

$= 1km + \frac{7}{1000} km = (1 + 0.007)km = 1.007km$

$\therefore$ Total distance

$$\begin{array}{r} 2.035 \\ +\ 1.007 \\ \hline 3.042 \end{array}$$

Hence, total distance walked by Naresh is 3.042 km.

Page No. 180

6. Sunita travelled 15 km 268 m by bus, 7 km 7 m by car and 500 m on foot in order to reach her school. How far is her school from her residence?

Sol. Distance travelled by bus
= 15 km 268 m = 15 km+ 268 m

$= 15km + 268 \times \frac{1}{1000} km \left[\because 1m = \frac{1}{1000} km\right]$

$= 15km + \frac{268}{1000} km = (15 + 0.268)km = 15.268km$ Distance travelled by car

$= 7km7m = 7km + 7m$

$= 7km + 7 \times \frac{1}{1000} km \quad \left[\because 1m = \frac{1}{1000} km\right]$

$= 7km + \frac{7}{1000} km = 7km + 0.007km$

$= (7 + 0.007)km = 7.007km$

Distance travelled by foot

$= 500m = 500 \times \frac{1}{1000} km \left[\because 1m = \frac{1}{1000} km\right]$

$= \frac{500}{1000} km = 0.0500km$

$\therefore$ Total distance travelled by Sunita

$$\begin{array}{r} 15.268 \\ 7.007 \\ +\ 0.500 \\ \hline 22.775 \end{array}$$

Hence, total distance travelled by Sunita is 22.775 km.

7. Ravi purchased 5 kg 400 g rice, 2 kg 20 g sugar and10 kg 850 g flour. Find the total weight of his purchases.

TIPS

Firstly, write the weight in kg using decimals and then add by puttingone below other same as whole numbers.

Sol. Weight of rice purchased by Ravi

= 5 kg 400 g = 5 kg+ 400g

$= 5kg + 400 \times \frac{1}{1000} kg \quad \left[\because 1g = \frac{1}{1000} kg\right]$

$= 5kg + \frac{400}{1000} kg = (5 + 0.400)kg = 5.400kg$

Weight of sugar purchased by Ravi

$= 2kg20g = 2kg + 20g$

$= 2kg + 20 \times \frac{1}{1000} kg \quad \left[\because 1g = \frac{1}{1000} kg\right]$

$= 2kg + \frac{20}{1000} kg = (2 + 0.020)kg = 2.020kg$

Weight of flour purchased by Ravi

= 10 kg 850 g= 10 kg+850 g

$= 10kg + 850 \times \frac{1}{1000} kg \quad \left[\because 1g = \frac{1}{1000} kg\right]$

$= 10kg + \frac{850}{1000} kg = (10 + 0.850)kg = 10.850kg$

∴ Total weight of his purchases

$$\begin{array}{r} 5.400 \\ 2.020 \\ +\ 10.850 \\ \hline 18.270 \end{array}$$

Hence, total weight of all his purchases is 18.270 kg.

Exercise 8.6

Page No. 181

1. Subtract.
(a) ₹ 18.25 from ₹ 20.75
(b) 202.54 m from 250 m
(c) ₹ 5.36 from ₹ 8.40
(d) 2.051 km from 5.206 km
(e) 0.314 kg from 2.107 kg

Sol. (a) We have, ₹ 20.75 – ₹18.25
Now,

	Tens	Ones	Tenths	Hundredths
	2	0	7	5
–	1	8	2	5
		2	5	0

∴ ₹ 20.75 – ₹ 18.25=₹ (20.75 – 18.25)
=₹ 2.50
(b) We have, 250 m – 202.54m
Now,

	Hundreds	Tens	Ones	Tenths	Hundredths
	2	5	0	0	0
–	2	0	2	5	4
		4	7	4	6

∴ 250 m – 202.54m =(250 – 202.54) m
= 47.46m

(c) We have, ₹ 8.40 – ₹ 5.36
Now,

	Ones	Tenths	Hundredths
	8	4	0
–	5	3	6
	3	0	4

∴ ₹ 8.40 – ₹ 5.36=₹ (8.40 – 5.36)=₹ 3.04
(d) We have, 5.206 km – 2.051 km
Now,

	Ones	Tenths	Hundredths	Thousandths
	5	2	0	6
–	2	0	5	1
	3	1	5	5

∴ 5.206 km – 2.051 km = (5.206 – 2.051) km
=3.155 km
(e) We have, 2.107 kg – 0.314 kg

	Ones	Tenths	Hundredths	Thousandths
	2	1	0	7
–	0	3	1	4
	1	7	9	3

∴ 2.107 kg – 0.314 kg =(2.107 – 0.314) kg
=1.793 kg

2. **Find the value of**
(a) 9.756 – 6.28 **(b) 21.05 – 15.27** **(c) 18.5 – 6.79** **(d) 11.6 – 9.847**

TIPS
Firstly, write the decimals in columns with decimal points directlybelow each other, then subtract same as whole numbers.

Sol. (a) We have, 9.756 – 6.28
Now,

$$\begin{array}{r} 9.756 \\ -\,6.280 \\ \hline 3.476 \end{array}$$

∴ 9.756 – 6.28=3.476
(b) We have, 21.05 – 15.27
Now,

$$\begin{array}{r} 21.05 \\ -\,15.27 \\ \hline 5.78 \end{array}$$

∴ 21.05 – 15.27=5.78
(c) We have, 185 – 6.79
Now,

$$\begin{array}{r} 18.50 \\ -\,\;6.79 \\ \hline 11.71 \end{array}$$

∴ 18.50 – 6.79=11.71
(d) We have,11.6-9.847
Now,

$$\begin{array}{r} 11.600 \\ -\,9.847 \\ \hline 1.753 \end{array}$$

$\therefore 11.6 - 9.847 = 1.753$

Page No. 182

3. Raju bought a book for ₹ 35.65. He gave ₹ 50 to the shopkeeper. How much money did he get back from the shopkeeper?

Sol. $\therefore$ Book bought by Raju = ₹ 35.65and money gave to shopkeeper = ₹ 50
$\therefore$ Money get back from shopkeeper =₹50 – 35.65) = ₹ 1435
Hence, money get book from shopkeeper is₹14.35.

4. Rani had ₹ 18.50. She bought one ice-cream for₹ 11.75. How much money does she have now?

Sol. $\therefore$ Total money Rani had = ₹ 18.50 and cost of ice-cream = ₹ 11.75
$\therefore$ Remaining money =₹ (18.50 – 11.75)
=₹6.75
Hence, she have ₹ 6.75.

5. Tina had 20 m 5 cm long cloth. She cuts 4 m 50 cm length of cloth from this for making a curtain. How much cloth is left with her?

Sol. $\therefore$ Tina had length of cloth = 20 m 5 cm = 20 m+ 5 cm

$$= 20m + 5 \times \frac{1}{100} m \qquad \left[\because 1cm = \frac{1}{100} m\right]$$

$$= 20m + \frac{5}{100} m = (20 + 0.05)m = 20.05m$$

and length of cloth cut by her = 4 m 50 cm = 4 m+ 50 cm

$$= 4m + 50 \times \frac{1}{100} m \qquad \left[\because 1cm = \frac{1}{100} m\right]$$

$$= 4m + \frac{50}{100} m = (4 + 0.50)m = 4.50m$$

$\therefore$ Length of cloth left with Tina
$= 20.05m - 4.50\ m = (20.05 - 4.50)\ m = 15.55\ m$ Hence, 15.55 m cloth is left with her.

6. Namita travels 20 km 50 m everyday. Out of this she travels 10 km 200 m by bus and the rest by auto. How much distance does she travel by auto?

TIPS
Firstly, write the distance travelled by Namita in km using decimals. To find the distance travelled by auto, subtract distance travelled by bus from total distance travelled by Namita.

Sol. $\because$ Total distance travelled by Namita
=20 km 50 m= 20 km+ 50m

$$= 20km + 50 \times \frac{1}{1000} km \left[\because 1m = \frac{1}{1000} km\right]$$

$= 20km + \frac{50}{1000} km = (20 + 0.050)km = 20.050km$ and distance travelled by Namita by bus

= 10 km 200 m = 10 km+ 200 m

$= 10km + 200 \times \frac{1}{1000} km \left[\because 1m = \frac{1}{1000} km \right]$

$= 10km + \frac{200}{1000} km$

$= 10km + 0.200km = (10 + 0.200)km = 10.200km \because$ Distance travelled by auto

= 20.050 km – 10.200 km

= (20.050 – 10.200)km = 9.850km

Hence, she travels 9.850 km by auto.

7. Aakash bought vegetables weighing 10 kg. Out of this,kg 500 g is onions, 2 kg 75 g is tomatoes and the rest ispotatoes. What is the weight of the potatoes?

TIPS

Firstly, write the weight of all vegetables in kg using decimals, then add the weight of onions and tomatoes. To find the weight of potatoes, subtract this sum from total weight of vegetables.

Sol. Given, total weight of vegetables = 10 kg

Weight of onions = 3 kg 500 g = 3 kg+ 500 g

$= 3kg + 500 \times \frac{1}{1000} kg \quad \left[\because 1g = \frac{1}{1000} kg \right]$

$= 3kg + \frac{500}{1000} kg = 3kg + 0.500kg$

$= (3 + 0.500)kg = 3.500kg$

Weight of tomatoes = 2 kg 75 g = 2 kg + 75 g

$= 2kg + 75 \times \frac{1}{1000} kg \quad \left[\because 1g = \frac{1}{1000} kg \right]$

$= 2kg + \frac{75}{1000} kg = 2kg + 0.075kg$

$= (2 + 0.075)kg = 2.075kg$

$\therefore$ Total weight of onions and tomatoes

$= 3.500\ kg + 2.075\ kg = (3.500 + 2.075)kg = 5.575kg$

Now, weight of potatoes

= Total weight of vegetables

Weight of onions and tomatoes

$= 10\ kg - 5.575\ kg = (10 - 5.575)kg = 4.425\ kg$

Hence, the weight of potatoes is 4.425 kg.

NCERT Exemplar (Problems-Solutions)

1. **0.7499 lies between**

(a) 0.7 and 0.74 **(b) 0.75 and 0.79**

(c) 0.749 and 0.75 **(d) 0.74992 and 0.75**

Sol. Firstly, we convert the given two decimals of each option into like decimals and then check the given decimal lies between two decimals.

(a)Convert the given decimals into like decimals we get, 0.7000 and 0.7400.

Here, 0.7499 is more than 0.7400

So, it is not lies between 0.7000 and 0.7400.

(b) Convert the given decimals into like decimals we get, 0.7500 and 0.7900.

Here, 0.7499 is less than 0.7500.

So, it is not lies between 0.7500 and 0:7900

(c) Convert the given decimals into like decimals we get, 0.7490 and 0.7500.

Here, 0.7499 is more than 0.7490 but less than 0.7500.

So, it lies between 0.7490 and 0.7500.

(d) Convert the given decimals into like decimals we get, 0.74992 and 0.75000.

Here, 0.7499 is less than 0.74992.

So, it is not lies between 0.74992 and 0.75000.

Hence, option (c) is correct.

2. **The decimal 0.238 is equal to the fraction**

(a) $\frac{119}{500}$ **(b)** $\frac{238}{25}$

(c) $\frac{119}{25}$ **(d)** $\frac{119}{50}$

Sol. Firstly, write the given decimal as a fraction with denominator 1000 and then divide numerator and denominator by their HCF to write in lowest term.

We have, $0.238 = 0 + \frac{238}{1000}$

Now, HCF of 238 and 1000 = 2

$\therefore \quad \frac{238}{1000} = \frac{238 \div 2}{1000 \div 2} = \frac{119}{500}$

[dividing numerator and denominator both by 2]

The fraction of 0.238 is $\frac{119}{500}$.

Hence, option (a) is correct.

3. **The value of 50 coins of 50 paise = ₹ .....**

Sol. Given, number of coins of 50 paise = 50

Total amount of 50 coins = 50 x 50 = 2500 paise

We know that, 1 paise = ₹ $\frac{1}{100}$ $\therefore 2500$ paise

= ₹ $\frac{2500}{100}$ = ₹ 25.0

4. 3 hundredths + 3 tenths =.....

Sol. We have, 3 hundredths + 3 tenths

$= 3 \times \frac{1}{100} + 3 \times \frac{1}{10} = \frac{3}{100} + \frac{3}{100}$

Now, LCM of 100 and 10 = 100

$\therefore \frac{3}{100} + \frac{3}{10} = \frac{3}{100} + \frac{3 \times 10}{10 \times 10} = \frac{3}{100} + \frac{30}{100} = \frac{33}{100} = 0.33 \therefore 3$ hundredths + 3 tenths = 033

5. The place value of a digit at the tenths place is 10 times the same digit at the ones place.

Sol. False, because the place value of a digit at the tenths place is 1/10 times the same digit at the ones place, e.g. Let a number be 23.37.

Here, place value of 3 at ones place =3and place value of 3 at tenths place

$= \frac{3}{10} = 3 \times \frac{1}{10} = \frac{1}{10} \times$ Place value of 3 at ones place.

6. The place value of a digit at the hundredths place is 1/10 times the same digit at the tenths place.

Sol. True, because the place value of a digit at the hundredths place is1/10 times the same digit at the tenths place, e.g. Let a number be 5.77

Here, place value of 7 at tenths place = 7/10

and place value of 7 at hundredths place

$= \frac{7}{100} = \frac{7}{10} \times \frac{1}{10} = \frac{1}{10} \times$ Place value of 7 at tenths place.

7. Arrange 12.142, 12.124, 12.104, 12.401 and 12.214 in ascending order.

Sol. Given numbers are 12.142, 12.124, 12.104, 12.401 and 12.214.

$\therefore \quad 12.142 = 12 + \frac{1}{10} + \frac{4}{100} + \frac{2}{1000}$

$12.124 = 12 + \frac{1}{10} + \frac{2}{100} + \frac{1}{1000}$

$12.104 = 12 + \frac{1}{10} + \frac{0}{100} + \frac{4}{1000}$

$12.401 = 12 + \frac{4}{10} + \frac{0}{100} + \frac{1}{1000}$

$12.214 = 12 + \frac{2}{10} + \frac{1}{100} + \frac{4}{1000}$

Here, whole part of all numbers are same and tenths part of 12.142,12.124 and 12.104 are same.

Now, tenths part of 12.401 =4/10 and tenths part of $12.214 = \frac{2}{10}$

$\therefore \quad \frac{4}{10} > \frac{2}{10}$

$\therefore$ Hence, 12.401 > 12.214

Again, hundredths part of $12.142 = \frac{4}{100}$

$\therefore$ Hundredths part of $12.124 = \frac{2}{100}$ and hundredths part of $12.104 = \frac{0}{100}$

$\therefore \frac{4}{100} > \frac{0}{100} > \frac{0}{100} \therefore 12.142 > 12.124 > 12.104$

Hence, the ascending order of given numbers are12.104 < 12.124 < 12.142 < 12.214 < 12.401.

8. Write the largest four digit decimal number less than 1 using the digits 1, 5, 3 and 8 once.

Sol. Here, largest four digit number by using 1, 5, 3 and 8 is 8531.
For four digit decimal number less than 1, we divided 8531 by 10000.

i.e; $\frac{8531}{1000} = 0.8531$

Hence, the required decimal number is 0.8531.

9. Using the digits 2, 4, 5 and 3 once, write the smallest four digit decimal number.

Sol. Here, smallest four digit number by using 2, 4, 5 and 3 is 2345.
For four digit decimal number, we divided 2345 by 10000.

i.e. $\frac{2345}{10000} = 0.2345$

Hence, the required decimal number is 0.2345.

10. Round off 20.83 to nearest tenths.

Sol. For rounding off to tenths place, we look at the hundredths place.
Here, the digit is 3.
So, the digit at the tenths place (8) will not be increased by 1.
i.e. it will be equal to 0.
Hence, rounding off 20.83 to nearest tenths, we get 20.80.

11. Round off 75.195 to nearest hundredths.

Sol. For rounding off to hundredths place, we look at the thousandths place. Here, the digit is 5.
So, the digit at the hundredths place (9) will be increased by 1 (i.e. it will becomes 9+1).
Hence, the rounding off 75.195 to hundredths place, we get 75.200.

12. Round off 27.981 to nearest tenths.

Sol. For rounding off to tenths place, we look at the hundredths place, here the digit is 8.
So, the digit of the tenths place (9) will be increased by 1. (i.e. it will be comes 9 + 1 = 10)
27.0=27+10=28.0
Hence, the round off 27.981, we get 28.0

13. What should be added to 25.5 to get 50?

Sol. Here, we want to fill in the box in 25.5 +.....
= 50[or this we will have to find 50 - 25.5.
We perform this operation as follows by written the two numbershaving equal number of decimal places, i.e. 50 = 50.0Subtract 25.5 from 50.0 = 50.0 - 25.5 = 245
Hence, the required number to be added to 25.5 is 24.5.

14. Alok purchased 1 kg 200 g potatoes, 250 g dhania, 5 kg300 g onion, 500 g palak and 2 kg 600 g tomatoes. Find thetotal weight of his purchases in kilograms.

Sol. Firstly, we convert all the weight in the same unit i.e. gram intokilogram by divide 1000 and then find the total weight.

Given, weight of potatoes =

$=1kg+200g=1kg+200g$

$=1kg+\frac{200}{1000}kg=1kg+0.200kg=1.200kg\left[\because 1g=\frac{1}{1000}kg\right]$

Weight of dhania

$=250g=\frac{250}{1000}kg=0.250kg$

Weight of onion $=5kg300g=5kg+300g$

$=5kg+\frac{300}{1000}kg=5kg+0.300kg=5.300kg$

Weight of palak $=500g=\frac{500}{1000}kg=0.500kg$

Weight of tomatoes

$=2kg600g=2kg+600kg$

$=2kg+\frac{600}{1000}kg\left[\because 1g=\frac{1}{1000}kg\right]$

$=2kg+0.600kg=2.600kg$

$\therefore$ Total weight of his purchases in kilograms

= Weight of potatoes + Weight of dhania

+ Weight of onion

+ Weight of palak + Weight of tomatoes

$=1.200\ kg+0.250\ kg+5.300\ kg+0.500\ kg+2.600\ kg$

$=[1.200+0.250+5.3QO+0.500+2,600]kg=9-850kg$ Hence, the total weight is 9.850 kg.

15. Which one is greater? 1 m 40 .cm + 60 cm or 2.6 m.

Sol. Given, $1m40cm+60cm.\Rightarrow 1m+40cm+60cm=1m+100cm$ We know that, $1cm=\frac{1}{100}m$

$\therefore\ 1m40cm+60cm=1m+\frac{100}{100}m=1m+1m=2.0m$ On comparing 2.0 m and 2.6 m.

We have, $2.0=2+\frac{0}{10}$ and $2.6=2+\frac{6}{10}$

Here, whole part of both numbers are same i.e. 2.

Now, tenths part of $2=\frac{0}{10}$ and tenths part of $2.6=\frac{6}{10}\therefore\frac{6}{10}>\frac{0}{10}$

Hence, 2.6 is greater than 2.