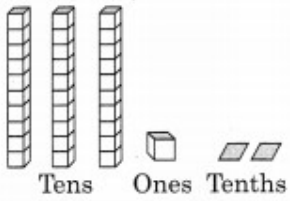
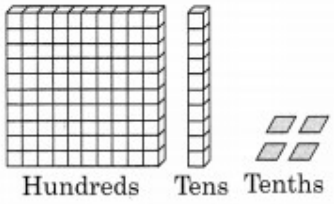
CHAPTER 7
DECIMAL

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

(a)



(b)



Hundreds (100)	Tens (10)	Ones (1)	Tenths $\left(\frac{1}{10}\right)$

Hundreds (100)	Tens (10)	Ones (1)	Tenths (1/10)
0	3	1	2
1	1	0	4

Solution:
From the given data, we have

Question 2.
Write the following decimals in the place value table.
(a) 19.4
(b) 0.3
(c) 10.6
(d) 205
Solution:

Place value table is given as under:

	Hundreds (100)	Tens (10)	Ones (1)	Tenths $\left(\frac{1}{10}\right)$	
(a)	0	1	9	4	(19.4)
(b)	0	0	0	3	(0.3)
(c)	0	1	0	6	(10.6)
(d)	2	0	5	9	(205.9)

Question 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
Solution:
(a) Seven-tenths = 7 x 110 = 0.7
(b) Two tens and nine-tenths = 2 tens + 0 ones + 9 tenths = 20 + 910 = 20.9
(c) Fourteen point six = 14.6
(d) One hundred and two ones
= 1 x 100 + 2 x 1 = 100 + 2 = 102
(e) Six hundred point eight = 600.8

Question 4.
Write each of the following as decimals:

$(a)\ \frac{5}{10}$ $(b)\ 3+\frac{7}{10}$

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

$(d)\ 70+\frac{8}{10}$ $(e)\ \frac{88}{10}$ $(f)\ \frac{2}{10}$

$(g)\ \frac{3}{2}$ $(h)\ \frac{2}{5}$ $(i)\ \frac{12}{5}$

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

Solution:

(a) $\frac{5}{10} = 0.5$

(b) $3 + \frac{7}{10} = 3 + 0.7 = 3.7$

(c) $200 + 60 + 5 + \frac{1}{10} = 265 + \frac{1}{10} = 265.1$

(d) $70 + \frac{8}{10} = 70 + 0.8 = 70.8$

(e) $\frac{88}{10} = 8.8$

(f) $\frac{2}{10} = 0.2$

(g) $\frac{3}{2} = \frac{3 \times 5}{2 \times 5} = \frac{15}{10} = 1.5$

(h) $\frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10} = 0.4$

(i) $\frac{12}{5} = \frac{12 \times 2}{5 \times 2} = \frac{24}{10} = 2.4$

(j) $3\frac{3}{5} = 3 + \frac{3}{5} = 3 + \frac{3 \times 2}{5 \times 2} = 3 + \frac{6}{10} = 3 + 0.6 = 3.6$

(k) $4\frac{1}{2} = 4 + \frac{1}{2} = 4 + \frac{1 \times 5}{2 \times 5} = 4 + \frac{5}{10}$

$= 4 + 0.5 = 4.5$

Question 5.

Write the following decimal as fractions. Reduce the fractions to lowest form.

(a) 0.6

(b) 2.5

(c) 1.0

(d) 3.8

(e) 13.7

(f) 21.2

(g) 6.4

Solution:

(a) $0.6 = 0 + \frac{6}{10} = \frac{6}{10}$

Lowest form of $\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$

(b) $2.5 = 2 + 0.5 = 2 + \frac{5}{10} = \frac{2 \times 10 + 5}{10}$

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

Lowest form of $\frac{25}{10} = \frac{25 \div 5}{10 \div 5} = \frac{5}{2}$

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

Lowest form is also 1.

(d) $3.8 = 3 + 0.8 = 3 + \frac{8}{10} = \frac{3 \times 10 + 8}{10}$

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

Lowest form of $\frac{38}{10} = \frac{38 \div 2}{10 \div 2} = \frac{19}{5}$

(e) $13.7 = 13 + 0.7 = 13 + \frac{7}{10} = \frac{13 \times 10 + 7}{10}$

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

137 and 10 are co-prime. So lowest form is also $= \frac{137}{10}$.

(f) $21.2 = 21 + 0.2 = 21 + \frac{2}{10} = \frac{21 \times 10 + 2}{10}$

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

Lowest form of $\frac{212}{10} = \frac{212 \div 2}{10 \div 2} = \frac{106}{5}$

(g) $6.4 = 6 + 0.4 = 6 + \frac{4}{10} = \frac{6 \times 10 + 4}{10}$

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

Lowest form of $\frac{64}{10} = \frac{64 \div 2}{10 \div 2} = \frac{32}{5}$

Question 6.

Express the following as cm using decimals.

(a) 2 mm
(b) 30 mm
(c) 116 mm
(d) 4 cm 2 mm
(e) 162 mm
(f) 83 mm

Solution:

We know that 10 mm = 1 cm.

$$(a)\ 2\text{ mm} = \frac{2}{10}\text{ cm} = 0.2\text{ cm}$$

$$(b)\ 30\text{ mm} = \frac{30}{10}\text{ cm} = 3\text{ cm}$$

$$(c)\ 116\text{ mm} = \frac{116}{10}\text{ cm} = \left(11 + \frac{6}{10}\right)\text{cm} = 11.6\text{ cm}$$

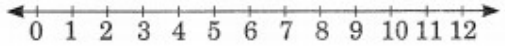
$$(d)\ 4\text{ cm }2\text{ mm} = 4\text{ cm} + 2\text{ mm}$$
$$= \left(4 + \frac{2}{10}\right)\text{cm} = 4.2\text{ cm}$$

$$(e)\ 162\text{ mm} = \frac{162}{10}\text{ cm} = \left(16 + \frac{2}{10}\right)\text{cm} = 16.2\text{ cm}$$

$$(f)\ 83\text{ mm} = \frac{83}{10}\text{ cm} = \left(8 + \frac{3}{10}\right)\text{cm} = 8.3\text{ cm}$$

Question 7.

Between which two whole numbers on the number line are the given numbers lie? Which of these whole numbers is nearer the number?



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

Solution:

(a) 0.8 lies between the whole numbers 0 and 1.
(a) 5.1 lies between the whole numbers 5 and 6.
(b) 2.6 lies between the whole numbers 2 and 3.
(c) 6.4 lies between the whole numbers 6 and 7.
(d) 9.1 lies between the whole numbers 9 and 10.
(e) 4.9 lies between the whole numbers 4 and 5.

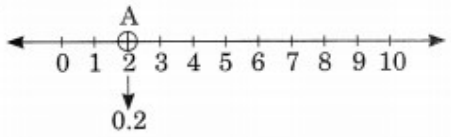
Question 8.

Show the following numbers on the number line.
(a) 0.2
(b) 1.9
(c) 1.1

(d) 2.5

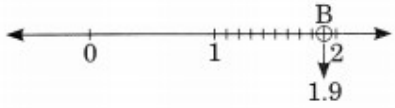
Solution:

(a) 0.2



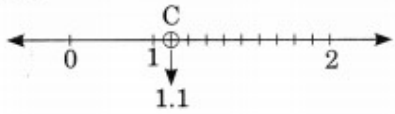
Point A represents 0.2.

(b) 1.9



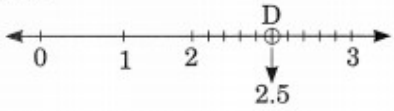
Point B represents 1.9.

(c) 1.1



Point C represents 1.1.

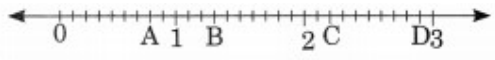
(d) 2.5



Point D represents 2.5.

Question 9.

Write the decimal number represented by the points A, B, C, D on the given number line.



Solution:

Point A represents 0.8
Point B represents 1.3
Point C represents 2.2
Point D represents 2.9

Question 10.

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

Solution:

(a) Length of the notebook = 9 cm 5 mm

$$= 9 \text{ cm} + \frac{5}{10} \text{ cm} = \left(9 + \frac{5}{10}\right) \text{ cm}$$

$$= (9 + 0.5) \text{ cm} = 9.5 \text{ cm}$$

(b) Length of the young gram plant = 65 mm

$$= \frac{65}{10} \text{ cm} = \left(6 + \frac{5}{10}\right) \text{ cm} = 6.5 \text{ cm}$$

Question 11.
Write the following terms in decimals numbers.
Five hundred plus three tens plus eight ones plus four tenths
Solution:
5 Hundred plus 3 Tens plus 8 Ones plus 4 Tenths is equal to:

= (5 x 100) + (3 x 10) + (8 x 1) + (4 x 110)

this results in

= 500 + 30 + 8 + 410

= 538 + 410 = 538.4

Question 12.
Write the following in decimal.

- **¾**
- **⅖**

Solution **2.**

1. ¾= 3×25/4×25 = 75/100 = 0.75
2. ⅖= 2×2/5×2 = 4/10= 0.4

Question 13.
Write the following terms as decimals numbers.
(a) Three tens plus eight-tenths

(b) Fifteen point seven decimal number

Solution

(a) Three tens plus eight-tenths = 3 x 10 + 8 x 10 = 30 + 0.8 = 30.8

(b) Fifteen point seven = 15.7

Question 14.
Write the following as decimals.

- **200+50+6+2/10**

- **150+30+8/10**

Solution **4:**

(a) 200 + 50 + 6 + 2/10 = 256 + 0.2 = 256.2

(b) 150 + 30 + 8/10 = 180 + 0.8 = 180.8

Question 15.
Write the following decimals as fractions. Reduce the fraction to the lowest form.
(a) 0.6

(b) 2.5

(c) 1.0

(d) 3.8

(e) 13.7

(f) 21.2

(g) 6.4

Solution

(a) 0.6 = 6 / 10

= 3 / 5

(b) 2.5 = 25 / 10

= 5 / 2

(c) 1.0 = 1

= 1

(d) 3.8 = 38 / 10

= 19 / 5

(e) 13. 7 = 137 / 10

(f) 21.2 = 212 / 10

= 106 / 5

(g) 6.4 = 64 / 10

= 32 / 5

Question 16.
Express the following as cm using decimals.
(a) 2 millimetre

(b) 30 millimetre

(c) 116 millimetre

(d) 4 cm 2 millimetre

(e) 162 millimetre

(f) 83 millimetre

Solution

As we know,

1 cm = 10 millimetre

1 millimetre = 1 / 10 cm

(a) 2 millimetre = 2 / 10 cm

= 0.2 cm

(b) 30 millimetre = 30 / 10 cm

= 3.0 cm

(c) 116 millimetre = 116 / 10 cm

= 11.6 cm

(d) 4 cm 2 millimetre = [(4 + 2 / 10)] cm

= 4.2 cm

(e) 162 millimeter = 162 / 10 cm

= 16.2 cm

(f) 83 mm = 83 / 10 cm

= 8.3 cm

Question 17.
Between which of the two whole numbers present on the number line do the given numbers lie?
Also, which of these whole numbers is nearer to the actual number?

(a) 0.8

(b) 5.1

(c) 2.6

(d) 6.4

(e) 9.1

(f) 4.9

Solution

(a) 0.8 lies between 0 and 1

0.8 is nearer to 1

(b) 5.1 lies between 5 and 6

5.1 is nearer to 5

(c) 2.6 lies between 2 and 3

2.6 is nearer to 3

(d) 6.4 lies between 6 and 7

6.4 is nearer to 6

(e) 9.1 lies between 9 and 10

9.1 is nearer to 9

(f) 4.9 lies between 4 and 5

4.9 is nearer to 5

Question 18.
Describe the following numbers on their respective number line.
(a) 0.2 (decimal)

(b) 1.9 (decimal)

(c) 1.1 (decimal)

(d) 2.5 (decimal)

Solution.

(a) The number 0.2 lies between the points 0 and 1 on the number line. Also, the space between the numbers 0 and 1 is divided into ten equal parts. And each equal part will be equal to one-tenth of the respective. Hence 0.2 is the second point between 0 and 1.

(b) The number 1.9 lies between 1 and 2 on the number line. Also, the space between points 1 and 2 is divided into ten equal parts. And each equal part will be equal to one-tenth. Hence 1.9 is the ninth point between 1 and 2.

(c) The number 1.1 lies between the 1 and 2 on the number line. Also, the space between points 1 and 2 is divided into ten equal parts. And each equal part will be equal to one-tenth. Hence 1.1 is the first point between 1 and 2.

(d) The number 2.5 lies between the 2 and 3 on the number line. Also, the space between points 2 and 3 is divided into ten equal parts. And each equal part will be equal to one-tenth. Hence 2.5 is the fifth point between 2 and 3.

Question 19
Write each of the following as decimals.
(a) 20 + 9 + 4 / 10 + 1 / 100

(b) 137 + 5 / 100

(c) 7 / 10 + 6 / 100 + 4 / 1000

(d) 23 + 2 / 10 + 6 / 1000

(e) 700 + 20 + 5 + 9 / 100

Solution

(a) 20 + 9 + 4 / 10 + 1 / 100

= 29 + 0.4 + 0.01

= 29.41

(b) 137 + 5 / 100

= 137 + 0.05

= 137.05

(c) 7 / 10 + 6 / 100 + 4 / 1000

= 0.7 + 0.06 + 0.004

=0.764

(d) 23 + 2 / 10 + 6 / 1000

= 23 + 0.2 + 0.006

= 23.206

(e) 700 + 20 + 5 + 9 / 100

= 725 + 0.09

= 725.09

Question 20.
Write each and every one of the following decimals in words.
(a) 0.03

(b) 1.20

(c) 108.56

(d) 10. 07

(e) 0.032

(f) 5.008

Solution.

The following are the decimals in words.

(a) 0.03 = zero point zero three

(b) 1.20 = one point two zero

(c) 108.56 = one hundred eight point five six

d) 10.07 = ten point zero seven

(e) 0.032 = zero point zero three two

(f) 5.008 = five point zero zero eight