Chapter 7

Decimals

Exercise 7.1

Question 1.

Write each of the following decimal numbers in words :

(i) 30.5

(ii) 0.03

(iii) 108.56

(iv) 47.20

(v) 5.008

(vi) 26.039

Solution:

(i) 30.5 Thirty point five

(ii) 0.03 zero point zero three

(iii) 108.56 One hundred eight point five six

(iv) 47.20 Forty seven point two zero.

(v) 5.008 Five point zero zero eight

(vi) 26.039 Twenty six point zero three mine

Question 2.

Write each of the following decimal numbers in the place value table :

(i) 4.2

(ii) 0.3

(iii) 205.9

(iv) 0.29

(v) 2.08

(vi) 7200.812

(vii) 38.007

Solution:

Places	**Thousands**	**Hundreds**	**Tens**	**Ones**	**Tenths**	**Hundredths**	**Thousandths**
Values	1000	100	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
(i)4.2				4	2		
(ii) 0 .3				0	3		
(iii) 205.9		2	0	5	9		
(iv) 0.29				0	2	9	
(v) 2.08				2	0	8	
(vi) 7200.812	7	2	0	0	8	1	2
(vii) 38.007			3	8	0	0	7

Question 3.

Write the following decimal numbers in the expanded form:

(i) 123.7

(ii) 43.06

(iii) 509.306

Solution:

(i) $123.7 = 100 + 20 + 3 + \frac{7}{10}$

(i) $43.06 = 40 + 3 + \frac{6}{100}$

(iii) $509.306 = 500 + 9 + \frac{3}{10} + \frac{6}{1000}$

Question 4 :

Write each of thre following as a decimal number :

(i) $200 + 60 + 5 + \frac{3}{10}$

(ii) $50 + \frac{1}{10} + \frac{6}{100}$

(iii) $70 + 6 + \frac{7}{10} + \frac{9}{1000}$

(iv) $600 + 7 + \frac{3}{100} + \frac{6}{1000}$

Solution:

(i) $200 + 60 + 5 + \frac{3}{10} = 265.30$

(ii) $50 + \frac{1}{10} + \frac{6}{100} = 50.16$

(iii) $70 + 6 + \frac{7}{10} + \frac{9}{1000} = 76.709$

(iv) $600 + 7 + \frac{3}{100} + \frac{6}{1000} = 607.036$

Question 5.

Write each of the following as decimals:

(i) Two ones and five tenths

(ii) Two tens and nine tenths

(iii) Six hundred point eight

(iv) Two hundred five and five hundredths

(v) Seven and fifteen thousandths

Solution:

(i) $2 \times 1 + 5 \times \frac{1}{10}$

$= 2 + \frac{5}{10} = 2.5$

(ii) $2 \times 10 + 9 \times \frac{1}{10}$

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

(iii) 600.8

(iv) $205 + \frac{5}{100} = 205.05$

(v) $7 + \frac{5}{1000} = 7.015$

Question 6.

Write the number given in the following place value table in decimal form:

	Thousands (1000)	**Hundreds (100)**	**Tens (100)**	**Ones(1)**	**Tenths** $\left(\frac{1}{10}\right)$	**Hundredths** $\left(\frac{1}{100}\right)$	**Thousandths** $\left(\frac{1}{1000}\right)$
(i)	7	1	0	2	3	0	6
(ii)		2	1	1	9	0	2
(iii)	3	0	5	3	0	1	5
(iv)			7	0	0	3	
(v)				5	4	0	
(vi)		7	1	9	0	2	8

Solution:

(i) 7102.306

(ii) 211.902

(iii) 3053.015

(iv) 70.03

(v) 5.40

(vi) 719.028

Question 7.

Show the following decimal numbers on the number line:

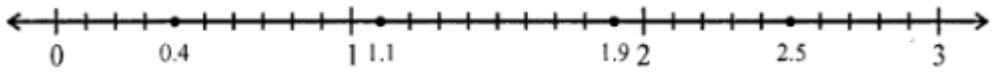
(i) 0.4

(ii) 1.9

(iii) 1.1

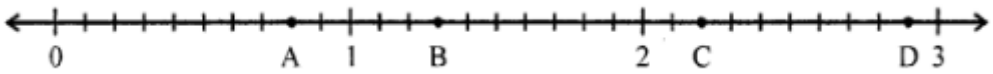
(iv) 2.5

Solution:



Question 8.

Write the decimal numbers represented by the points A,B, C and D on the given number line:



Solution:

A = 0.8

B = 1.3

C = 2.2

D = 2.9

Question 9.

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

(i) 0.06

(ii) 0.45

(iii) 0.66

(iv) 0.92

Solution:

(i) 0 and 0.1

(ii) 0.4 and 0.5

(iii) 0.6 and 0.7

(iv) 0.9 and 1.0

Exercise 7.2

Question 1.

Write the following decimal fractions as decimal numbers:

(i) $\frac{531}{10}$

(ii) $\frac{422}{100}$

(iii) $\frac{58301}{1000}$

(iv) $\frac{7}{10}$

(v) $\frac{3}{100}$

(vi) $\frac{37}{1000}$

Solution:

(i) $\frac{531}{10} = 53.1$

(ii) $\frac{422}{100} = 4.22$

(iii) $\frac{58301}{1000} = 58.301$

(iv) $\frac{7}{10} = 0.7$

(v) $\frac{3}{100}$ = 0.03

(vi) $\frac{37}{1000}$ = 0.037

Question 2.

Write the following decimal numbers as decimal fractions:

(i) 54.01

(ii) 318.105

(iii) 0.37

(iv) 0.047

(v) 0.03

(vi) 34.5

Solution:

(i) 54.01 = $\frac{5401}{100}$

(ii) 318.105 = $\frac{318105}{1000}$

(iii) 0.37 = $\frac{37}{100}$

(iv) 0.047 = $\frac{47}{1000}$

(v) $0.03 = \frac{3}{100}$

(vi) $34.5 = \frac{345}{10}$

Question 3.
Write the following decimal numbers as fractions in lowest terms:
(i) 0.8

(ii) 0.04

(iii) 0.04

(iv) 0.125

(v) 0.225

(vi) 0.066

(vii) 0.092

Solution:

(i) $0.8 = \frac{8}{10} = \frac{4}{5}$

(ii) $0.04 = \frac{4}{100} = \frac{1}{25}$

(iii) $0.125 = \frac{125}{1000} = \frac{1}{8}$

(iv) $0.225 = \frac{225}{1000} = \frac{9}{40}$

(vi) $0.066 = \frac{66}{1000} = \frac{33}{503}$

(vii) $0.092 = \frac{92}{1000} = \frac{23}{250}$

Question 4.

Convert the following decimal numbers into mixed fractions:

(i) 31.6

(ii) 3.25

(iii) 7.025

(iv) 95.95

Solution:

(i) $31.6 = \frac{316}{10} = \frac{158}{5} = 31\frac{3}{5}$

(ii) $3.25 = \frac{325}{100} = \frac{13}{4} = 3\frac{1}{4}$

(iii) $7.025 = \frac{7025}{1000} = \frac{281}{40} = 7\frac{1}{40}$

(iv) $95.25 = \frac{9525}{100} = \frac{1919}{20} = 95\frac{19}{20}$

Question 5.

Convert the following fractions into decimal numbers:

(i) $\frac{4}{5}$

(ii) $\frac{6}{25}$

(iii) $\frac{112}{125}$

(iv) $\frac{3}{4}$

(v) $\frac{3}{8}$

(vi) $7\frac{3}{40}$

Solution:

(i) $\frac{4}{5} = \frac{4\times20}{5\times20} = \frac{80}{100} = 0.8$

(ii) $\frac{6}{25} = \frac{6\times4}{25\times4} = \frac{24}{100} = 0.24$

(iii) $\frac{112}{125} = \frac{112\times8}{125\times8} = \frac{896}{1000} = 0.896$

(iv) $\frac{3}{4} = \frac{3\times125}{8\times125} = \frac{375}{100} = 0.375$

(v) $7\frac{3}{40} = \frac{7\times(40+3)}{40} = \frac{283\times25}{40\times25} = \frac{7075}{1000} = 7.075$

Question 6.

Convert the following unlike decimal numbers to like decimal numbers:

(i) 17.5, 3.912

(ii) 5.04, 13.1902

(iii) 2.451, 3.7, 28.34

(iv) 3.1, 2.678, 27.0103

Solution :

(i) 17.500, 3.912

(ii) 5.0400, 13.1902

(iii) 2.451, 3.700, 28.340

(iv)3.1000, 2.6780, 27.0103

Question 7.

In each of the following pairs of decimal numbers, state which number is greater ?

(i) 0.3, 0.4

(ii) 1, 0.99

(iii) 1.09, 1.093

(iv) 0.5,0.05

Solution:

(i) 0.3, 0.4

Multiply both with 10, we get

3, 4

∴ 0.4 is greater than 0.3

(ii) 1.099

Multiply both with 100, we get

100, 99

∴ 1 is greater than 0.99

(iii) 1.09, 1.093

Multiply both with 1000, we get

1090, 1.093

∴ 1.093 is greater than 1.09

(iv) 0.5, 0.05

Multiply both with 100, we get

50, 5

∴ 0.5 is greater than 0.05

Question 8.

In each of the following pairs of decimal numbers, state which number is smaller.

(i) 45.78, 345.8

(ii) 37.701, 37.71

(iii) 5.097, 5.093

Solution:

(i) 45.78

(ii) 37.701

(iii) 5.093

Question 9.

Arrange the following decimal numbers in ascending order:

(i) 27.35, 27.305, 2.7, 2.543

(ii) 4.53, 4.07, 29.1, 0.9, 0.709

Solution:

(i) 2.543, 2.7, 27.305, 27.35

(ii) 0.709, 0.9, 4.07, 4.53, 29.1

Question 10.

Arrange the following decimal numbers in descending order.

(i) 3.303, 33.03, 3.3,30.33

(ii) 72.5, 2.75, 27.505, 0.275, 2.507

Solution:

(i) 33.03, 30.33, 3.303, 3.3

(ii) 72.5, 27.505', 2.75, 2.507, 0.275

Exercise 7.3

Question 1.

Add:

(i) 17.5, 8.8

(ii) 9.999, 0.03

(iii) 5.87, 1.03, 0.1

(iv) 23.71, 9.9, 4.023

(v) 4.5, 16.024, 7.99

(vi) 8.79, 23.001, 5.41, 0.875

Solution;

(i) 17.5, 8.8

$$\begin{array}{r} 17.5 \\ +8.8 \\ \hline 26.3 \end{array}$$

(ii) 9.999, 0.03

$$\begin{array}{r} 9.999 \\ +\ 0.030 \\ \hline 10.029 \end{array}$$

(iii) 5.87, 1.03, 0.1

$$\begin{array}{r} 5.87 \\ 1.03 \\ +\ 0.10 \\ \hline 7.00 \end{array}$$

(iv) 23.71, 9.9, 4.023

$$\begin{array}{r} 23.710 \\ +\ \ 9.900 \\ \ \ 4.023 \\ \hline 37.633 \end{array}$$

(v) 4.5, 16.024, 7.99

$$\begin{array}{r} 04.500 \\ 16.024 \\ +07.990 \\ \hline 28.\ 514 \end{array}$$

(vi) 8.79, 23.001, 5.41, 0.875

$$\begin{array}{r} 08.790 \\ 23.001 \\ 05.410 \\ +\ \ 00.875 \\ \hline 38.076 \end{array}$$

Question 2.

Work out :

(i) 5.82 – 2.65

(ii) 19.01 – 12.234

(iii) 15.4 + 3.015 – 14.237

(iv) 7.4 + 2.19 – 0.456 – 3.5

(v) 19.27 – 3.6 – 8.812 + 0.84

(vi) 6.4 – 2.351 – 1.45 – 0.999

Solution:

(i) 5.82 – 2.65

$$\begin{array}{r} 5.82 \\ -\ 2.65 \\ \hline 3.17 \end{array}$$

(ii) 19.01 – 12.234

$$\begin{array}{r} 19.010 \\ -\ 12.234 \\ \hline 6.776 \end{array}$$

(iii) 15.4 + 3.015 – 14.237

$$\begin{array}{r} 15.400 \\ +\ 03.015 \\ \hline 18.415 \end{array}$$

(iv) 7.4 – 2.19 – 0.456 – 3.5

$$\begin{array}{r} 7.40 \\ -\ 2.19 \\ \hline 5.21 \end{array}$$

(v) 19.27 – 3.6 – 8.812 + 0.84

$$\begin{array}{r} 19.27 \\ -3.60 \\ \hline 15.67 \end{array} \qquad \begin{array}{r} 15.670 \\ -\ 08.812 \\ \hline 6.858 \end{array} \qquad \begin{array}{r} 6.858 \\ +\ 0.840 \\ \hline 7.698 \end{array}$$

(vi) 6.4 – 2.351 – 1.45 – 0.999

$$\begin{array}{r} 6.400 \\ -\ 2.351 \\ \hline 4.049 \end{array} \qquad \begin{array}{r} 4.049 \\ -\ 1.450 \\ \hline 2.599 \end{array} \qquad \begin{array}{r} 2.599 \\ 0.999 \\ \hline 1.600 \end{array}$$

Q.3 What nuber off added to 0.756 gives 1 ?

Solution: Let the number of be addiesd -

What number added to 0.756 gives 1?
Solution:
Let the number to be added is = x
According to question,

$x + 0.756 = 1$

x = 1.000 – 0.756 = 0.244
∴ Number addes is 0.2444.

Question 4.
By how much should 17.45 be decreased to get 7.9702?
Solution:
One number = 17.45
Outcome = 7.9702
Second number = ?

$$\begin{array}{r} 17.4500 \\ -\ 07.9702 \\ \hline 9.4798 \end{array}$$

Exercise 7.4

Question 1.

Evaluate the following:

(i) 3.7×4.5

(ii) 12.08×9.3

(iii) 238.06×7.5

(iv) 0.79×32.4

(v) $3.6 \times 1.4 \times 0.7$

(vi) $9.01 \times 2.5 \times 1.6$

Solution:

(i) 3.7×4.5

$$
\begin{array}{r}
3.7 \\
\times 4.5 \\
\hline
185 \\
148\times \\
\hline
16.65 \\
\hline
\end{array}
$$

(ii) 12.08 × 9.3

12.08

× 9.3

3624

10872×

112.344

(iii) 238.06 × 7.5

238.06

× 7.5

119030

166642×

1785.450

(iv) 0.79 × 32.4

32.4

× .76

2916

2268×

25.596

(v) 3.6 × 1.4 × 0.7

3.6	5.04
× 1.4	× .7
144	3.528
36×	
5.04	

(vi) 9.01 × 2.5 × 1.6

9.01	22.525
× 2.5	× 1.6
4505	135150
1802×	22525×
22.525	36.0400

Question 2.

Workour following:

(i) 70.756 ÷ 4

(ii) 2.46 ÷ 6

(iii) 3.016 ÷ 8

(iv) 8.64 ÷ 3.6

(v) 72.8 ÷ 0.04

(iv) 0.144 ÷ 0.02

Solution:

(i) 70.756 ÷ 4

$$
\begin{array}{r|l}
4 & 70.756 \\
 & -4 \\
\hline
 & 30 \\
 & -28 \\
\hline
 & 27 \\
 & -24 \\
\hline
 & 35 \\
 & -32 \\
\hline
 & 36 \\
 & 36 \\
\hline
 & \times
\end{array}
\quad 17.689
$$

(ii) 2.46 ÷ 6

$$
\begin{array}{r|l}
6 & 2.46 \\
 & -2.4 \\
\hline
 & 6 \\
= & 6 \\
\hline
 & \times \\
\hline
\end{array}
\quad .41
$$

(iii) $3.106 \div 8$

$$
\begin{array}{r|l}
8 & 3.106 \\
 & -24 \\
\hline
 & 61 \\
 & -56 \\
\hline
 & 56 \\
 & -\ \ 56 \\
\hline
 & \times
\end{array}
\qquad .377
$$

(iv) $8.64 \div 3.6$

$= 86.4 \div 36$

$$
\begin{array}{r|l}
36 & 86.4 \\
 & -72 \\
\hline
 & 144 \\
 & -144 \\
\hline
 & \times
\end{array}
\qquad 2.4
$$

(v) $72.8 \div 0.04$

$= \frac{72.8}{0.04} = \frac{7280}{4}$

$$
\begin{array}{r}
1820 \\
4\overline{)\,7280\,(} \\
-\,4 \\
\hline
32 \\
-\,32 \\
\hline
8 \\
-8 \\
\hline
\times \\
\hline
\end{array}
\qquad\qquad
\begin{array}{r}
7.2 \\
2\overline{)\,14.4\,(} \\
-14 \\
\hline
4 \\
-\,4 \\
\hline
0
\end{array}
$$

Question 3.
Multiply each of the following numbers bu 10, 100 amda rt

Solution:

(i) 4.7
(ii) 3.45
(iii) 23.01
Solution:
(i) 4.7
$4.7 \times 10 = 47$
$4.7 \times 100 = 470$
$4.7 \times 1000 = 4700$

(ii) 3.45
$3.45 \times 10 = 34.5$
$3.45 \times 100 = 345$
$3.45 \times 1000 = 3450$

(iii) 0.234
$0.234 \times 10 = 2.34$

$0.234 \times 100 = 23.4$
$0.234 \times 1000 = 234$

Question 4.

Divide each of the following numbers by 10, 100 and 1000 (Orally).

(i) 4.7

(ii) 3.45

(iii) 23.01

Solution:

(i) 4.7

$4.7 \div 10 = 0.47$

$4.7 \div 100 = 0.047$

$4.7 \div 1000 = 0.0047$

(ii) 3.45

$3.45 \div 10 = 0.345$

$3.45 \div 100 = 0.0345$

$3.45 \div 1000 = 0.00345$

(iii) 23.01

$23.1 \div 10 = 2.301$

$23.1 \div 100 = 0.2301$

$23.1 \div 1000 = 0.02301$

Exercise 7.5

Question 1:
Express as using a s decimals.
(i) 75 paise
(ii) 1025 paise
(iii) 63 rupees 9 paise
Solution:
(i) 75 paise = ₹$\frac{75}{100}$ = ₹0.75

(ii) 1025 paise = ₹$\frac{1025}{1000}$ =₹10.25

(iii) 63 rupees = ₹63.09

Question 2.

Express as cm using decimals.

(i) 8 mm

(ii) 263 mm

(iii) 13cm 3 mm

Solution:

(i) 8mm = $\frac{8}{10}$ $cm = 0.8cm$

(ii) 263 mm = $\frac{263}{10}$ = 26.3 cm

(iii) 13cm 3mm =13 cm × 310 $cm = 13.3cm$

Question 3.

Express as metres using decimals:

(i) 6 cm

(ii) 528 cm

(iii) 7m 55cm

Solution:

(i) 6 cm = $\frac{6}{100} m = 0.06m$

(ii) 528 cm = $\frac{528}{100}$m = 5.28 m

(iii) 7m 55cm = 7m + 55 cm

= 7 m + $\frac{55}{100}$m = (7 + .55)m = 7.55m

Question 4.

Express as km using decimals:

(i) 5 m

(ii) 888m

(iii) 15km 88m

Solution:

(i) 5m = $\frac{5}{1000}$ = 0..005km

(ii) 528m = 888v00km = 0.888km

(iii) 15km 88m = 15km + 88m

= 15 km + 881000 km

= (15 + 0.88) kmsss

= 15.088km

Question 5.

Express as kg using decimals:

(i) 37g

(ii) 100 g

(iii) 5kg 8g

Solution:

(i) 37g = 371000kg = 0.037 kg

(ii) 100g = $\frac{100}{1000}$ kg = 0.1kg

(iii) 5kg 8g = 5kg + 8gm

= 5 kg = 81000kg.

= (5 + .008)kg = 5.008kg

Question 6.

Anita bought 2m 70 cm cloth for her shirt and 2m 85 cm cloth for her trouser. Find the total length of the cloth bought by her.

Solution:

Cloth bought for her shirt

= 2m 70 cm = 2m + 70 cm

= 2m + 70100m

= 2m + 0.70m ($\because 1cm = 1100m$)

= (2m + 0.70) m = 2.70m

Cloth bought for her trouser

= 2m 85 cm = 2m + 85 cm

= 2m + 85100m = 2m + 0.85 m ($\because 1cm$ = 1100m)

= (2 + 0.85) m = 2.85

$\therefore$ Total lengths of cloth bought is 2.70 m + 2.85m = 5.55m

Question 7.

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

Solution:

Distance travelled by bus

= 15km 268 m = 15km + 268m

= 15 km + $\frac{268}{1000}$ km

= 15km + 0.268km

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

= (15 + 0.268) km = 15.268km

Distance travelled by car

= 7 km 7m = 7km + 7m

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

= 7 km + 0.007km

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

= (7 + 0.007) km = 7.007km

Distance travelled by foot

= 500m = $\frac{500}{1000}\ km = 0.500$ km

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

∴ Distance of school from residence

= 15.268km + 7.007 km + 0.500km

= 22.775 km

1				1			
	1	5	.	2	6	8	km
+		7	.	0	0	7	km
+		0	.	5	0	0	km
=	2	2	.	7	7	5	km

Question 8.

Rahul bought 4kg 90g apples, 2kg 60g grapes and 5kg 300g mangoes.Find the total weight of all the fruits he bought.

Solution:

Weight of apples = 4kg 90g

= 4 kg + $\frac{90}{1000}kg$ $\left(\because\ 1g = \frac{1}{1000}kg\right)$

= 4kg + 0.09kg

= (4 + 0.09)kg = 4.09kg

Weight of grapes = 2kg 60g

= 2kg + $\frac{60}{1000}$ $\left(\because\ 1g = \frac{1}{1000}kg\right)$

= 2kg + 0.06 kg

= (2 + 0.06) kg = 20.6kg

Weight of mangoes = 5kg 300g

= 5kg + $\frac{300}{1000}$kg $\left(\because\ 1g = \frac{1}{1000}kg\right)$

= 5kg + 0.3kg

= (5 + 0.3)kg = 5.3kg

Total weight of his purchases is

= 4.090kg + 2.060 kg + 5.300kg

= 11.450kg

Question 9.

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

Solution:

Money Rani had = ₹18.50

Ice-cream bought for = ₹11.75

∴ Money she has now = ₹18.50 - ₹11.75 = ₹6.75

			7	14		1
	₹	1	8	.	5	0
-	₹	1	1	.	7	5
=	₹		6	.	7	5

Question 10.

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

Solution:

Length of cloth Tina had

= 20m 5cm = 20m + 5cm

$= 20\text{m} + \frac{5}{100}m = 20m + 0.05m$

$\left[\because \frac{1}{100}\, cm = 0.01m\right]$

$= (20 + 0.05)m = 20.05m$

Length of cloth cut of 4m 50cm

= 4m + 50 cm

$= 4\text{m} + \frac{50}{100}m = 4m + 0.50m$

$\left[\because \frac{1}{100}\, cm = 0.01m\right]$

= (4 + 0.50)m = 4.50m

∴ Length of cloth left = 20.05 m – 4.50m

= 15.55

	1	9		10		
	2	0	.	0	5	m
-		4	.	5	0	m
=	1	5	.	5	5	m

Question 11.

Ruby bought a watermelond weighing 5kg 300g. Out of which she gave 2kg 680g to her neighbour. What is the weight of the watermelon left with Ruby?

Solution:

Total weight of watermelon = 5kg300gm

∴ Given to neighbour = 2kg 680gm

∴ Weight of watermelon left

$= 5 \times 1000 + 300gm - 2 \times 1000gm + 680gm$

= 5300 gm – 2680 gm = 2620 gm

Question 12.

The cost of 1 metre of cloth is ₹ 35.80. What will be cost of 9.8 metres of cloth?

Solution:

Given: Cost of one metre cloth = ₹ 35.80

∴ Cost of 9.8 metre cloth is

$$\begin{array}{r} 35.80 \\ \times\ 9.8 \\ \hline 28640 \\ 32220\times \\ \hline 350840 \\ \hline \end{array}$$

Cost of 9.8m cloth = ₹ (35.80×9.8)

= ₹350.84

Question13.
Farida bought some bags of cement, each weighing 49.8kg. If the total weight of all the bags is 1792.8 kg, how many bags did she buy ?
Solution:

Total weight of bag = 1792.8 kg
Weight of cement bag = 49.8kg
∴ The number of bags she bought
$= \frac{1792.8}{49.8} = \frac{17928\times10}{498\times10} = 36$

Objective Types Question

Mental Maths

Question 1.

Fill in the blanks:

(i) The decimal point in a decimal number is placed between ones digit and ……..digit.
(ii) The place value of the digit 3 in the decimal number is 15.437 is …….

(iii) The decimal number 27.025 has……decimal places.
(iv) The decimal number 5.06 is read as five point.
(v) If an object is divided into 10000 equal parts, then its 27 parts are represented by …….
(vi) Two decimal numbers having different number of …….. are called unlike decimal numbers.
(vii) 4 tens, 3 ones, 2 tenths, 0 hundredths and 5 thousandths in decimal form is written as……
(viii) The smallest decimal number upto three decimal places is …….

Solution:

(i) The decimal point in a decimal number is placed between ones digit and **tenths** digit.
(ii) The place value of the digit 3 in the decimal number is 15.437 is $\frac{3}{100}$.

(iii) The decimal number 27.025 has **3** decimal places.
(iv) The decimal number 5.06 is read as five point **zero six.**
(v) If an object is divided into 10000 equal parts, then its 27 parts are represented by **0.027.**

(vi) Two decimal numbers having different number of **decimal places** are called unlike decimal numbers.
(vii) 4 tens, 3 ones, 2 tenths, 0 hundredths and 5 thousandths in decimal form is written as **43.025.**
(viii) The smallest decimal number upto three decimal places is **0.001.**

Question 2.

State whether the following statements are true (T) or False (F):

(i) Every decimal umber can be represented by a point on a number line.
(ii) Fractions with denominator 10, 100, 1000, are called decimal fractions.
(iii) A decimal number having 3 decimal places can be written as a fraction with denominator 1000.
(iv) The value of a decimal number remains the same if any number of extra zeros are written at the end of a decimal number.
(v) If a decimal number is multiplies by 10, then the decimal point moves by one place to the left.

Solution:

(i) Every decimal umber can be represented by a point on a number line. **True**
(ii) Fractions with denominator 10, 100, 1000, are called decimal fractions. **True**

(iii) A decimal number having 3 decimal places can be written as a fraction with denominator 1000. **True**

(iv) The value of a decimal number remains the same if any number of extra zeros are written at the end of a decimal number. **True**

(v) If a decimal number is multiplies by 10, then the decimal point moves by one place to the left. **False**

Multiple Choice Questions

Choose the correct answer from the given four options (3 to 23):

Question 3.

Five and seven hundredth is equal to

(a) 5.7

(b) 5.07

(c) 5.70

(d) 0.57

Solution:

$\frac{507}{100}$ =5.07 (b)

Question 4.

Sixty Three thousandths is equal to:

(a) 0.63

(b) 0.603

(c) 0.063

(d) 0.630

Solution:

0.063 (c)

Question 5.

$3\frac{7}{100}$ is equal to:

(a) 3.07

(b) 3.7

(c) 3.70

(d) 3.007

Solution:

$3.07 = 3\frac{7}{100} = \frac{307}{100} = 3.07$ (a)

Question 6.

$5\frac{3}{1000}$ is equal to:

(a) 5.03

(b) 5.3

(c) 5.003

(d) 5.0003

Solution:

5.003 (c)

Question 7.

The place value of the digit 7 in the decimal number 5.0378 is

(a) 7

(b) $\frac{7}{10}$

(c) $\frac{7}{100}$

(d) $\frac{7}{1000}$

Solution:

(d) $\frac{7}{1000}$

Places	**One**	**Tenths**	**Hundredths**	**Thousandths**	**ten thousandths**
Values	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	$\frac{1}{10000}$
5.0378	5	0	3	7	8

Question 8.

The place value of the digit 0 in the decimal number 13.405 is

(a) 0

(b) $\frac{1}{10}$

(c) $\frac{1}{100}$

(d) none of these

Solution:

(c) $\frac{1}{100}$

Places	**One**	**Tenths**	**Hundredths**	**Thousandths**	**ten thousandths**
Values	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	$\frac{1}{10000}$
5.0378	5	0	3	7	8

Question 9.

The value of $5 + \frac{7}{10} + \frac{3}{1000}$ is

(a) 5.73

(b) 5.703

(c) 5.073

(d) 0.753

Solution:

5.703 (b)

$5 + \frac{7}{10} + \frac{3}{1000} = 5 + \frac{7}{10} + \frac{0}{100} + \frac{3}{1000} = 5.703$

Question 10:

The value of $\frac{3}{25}$ is

(a) 1.2

(b) 0.012

(c) 0.12

(d) none of these

Solution:

$\frac{3}{25} = \frac{3}{25} = \frac{4}{4}$ [Multiply and divide by 4]

$= \frac{12}{100} = 0.12$ (c)

Question 11.

The value of $5\frac{1}{25}$ is

(a) 5.4

(b) 5.25

(c) 5.04

(d) 5.004

Solution:

$5\frac{1}{25} = \frac{126.4}{25.4} = \frac{504}{100} = 5.04$ (c)

Question 12.

The decimal number not equivalent to 5.7 is

(a) 5.70

(b) 5.07

(c) 5.700

(d) 5.700

Solution:

5.07 (b)

Question 13.

1 g is equal to

(a) 0.1 kg

(b) 0.01 kg

(c) 0.001 kg

(d) 0.0001 kg

Solution:

0.001 kg (c)

Question 14.

2 km 7m is equal to

(a) 2.7 km

(b) 2.07 km

(c) 2.007 km

(d) 2.0007 km

Solution:

2 km 7m = $\frac{2007}{1000}$ km = 2.007km (c)

Question 15.

Among 2.34, 2.43, 2.344 and 2.4, the greatest number is

(a) 2.34

(b) 2.43

(c) 2.344

(d) 2.4

Solution:

2.34, 2.43, 2.344 and 2.4

Multiply the above number with 100

2.34, 2.43, 234.4 and 240

∴ The greater number is 2.43(b)

Question 16.

5.2 – 3.6 is equal to

(a) 0.16

(b) 2.6

(c) 0.26

(d) 1.6

Solution:

5.2 -3.6 = $\frac{52}{10} - \frac{36}{10} = \frac{16}{10}$ = 1.6 (d)

Question 17.

A decimal number lying between 2.2 and 2.22 is

(a) 2.12

(b) 2.23

(c) 2.219

(d) 2.3

Solution:

(c) 2.219

Question 18.

0.023 lies between

(a) 0.2 and 0.3

(b) 0.02 and 0.03

(c) 0.029 and 0.03

(d) 0.026 and 0.024

Solution:

0.02 and 0.03 (b)

Question 19.

0.7499 lies between

(a) 0.7 and 0.74

(b) 0.759 and 0.799

(c) 0.749 and 0.75

(d) 0.74992 and 0.75

Solution:

0.749 and 0.75 (c)

Question 20.

Which of the following decimal numbers is the greatest ?

(a) 0.182
(b) 0.038
(c) 0.219
(d) 0.291

Solution:

0.291 (d)

Question 21.

Which of the following decimal numbers is the smallest?

(a) 0.108

(b) 1.08

(c) 0.801

(d) 0.81

Solution:

(a) 0.108

Question 22.

0.003×0.2 is equal to

(a) 0.6

(b) 0.06

(c) 0.006

(d) 0.0006

Solution:

0.0006 (d)

Question 23.

0.45 + 0.9 is equal to

(a) 50

(b) 5

(c) 0.5

(d) 0.05

Solution:

(c) 0.5

$$
\begin{array}{r}
0.5 \\
9 \overline{)\,0.45\,(} \\
\underline{0} \\
45 \\
\underline{45} \\
\times
\end{array}
$$

Higher Order Thinking Skills (HoTs)

Qustion 1.

On her birthday, Ayushi is taking her 5 friends to a movie and treats them with cold costs. The cost of a ticket is ₹150 and a cold drink cost ₹ 28.50. How much Ayushi has to spend?

Solution:

Number of friends = 5 +1 Ayushi herdelf = 6

Cost of 1 ticket = ₹150

Cost of 6 tickets = ₹150 × 6 = 900

Cost of 1 cold drink = ₹28.50

Cost of 6 cold drinks = ₹28.50 6 = 171

Ayushi has to spend = ₹900 + ₹171 = ₹1071

Question: 2

Write digits in the boxes of the number :

(i) greater possible number

(ii) Smallest possible number. Repetition of digits in a number is not allowed.

Solution:

(i) Greatest possible number

= 3 9 4 7 8 5 4

(ii) Smallest possible number

= 3 0 6 1 8 2 4

Check Your Progress

Question 1.

Convert the following decimal numbers into fractions (in lowest terms).

(i) 6.015

(ii) 0.876

(iii) 23.375

Solution:

$= \frac{6015}{1000} = \frac{1203}{200} = 6\frac{3}{200}$

$$200 \overline{)\ 1203 (\ 6}$$
$$\underline{1200}$$
$$3$$

(ii) $0.876 = \frac{876}{1000} = \frac{438}{500} = \frac{219}{250}$

(iii) 23.375

$= \frac{935}{40} = \frac{187}{8} = 23\frac{3}{8}$

$$
\begin{array}{r}
23 \\
8\overline{)\,187} \\
16 \\
\hline
27 \\
24 \\
\hline
3
\end{array}
$$

Question 2.
Write the following fractions as decimals numbers:
(i) $\frac{5}{8}$
(ii) $2\frac{31}{125}$
(iii) $13\frac{7}{40}$

Solution:

(i) $\frac{5}{8} = \frac{5\times125}{8\times125} = \frac{625}{1000} = 0.625$

(ii) $2\frac{31}{125} = \frac{281\times8}{125\times8} = \frac{2248}{1000} = 2.248$

(iii) $13\frac{7}{40} = \frac{527}{40} = 13.175$

$$
\begin{array}{r|l}
40 & 527 \\
 & 40 \\
\hline
 & 127 \\
 & 120 \\
\hline
 & 70 \\
 & 40 \\
\hline
 & 300 \\
 & 280 \\
\hline
 & 200 \\
 & 200 \\
\hline
 & \times
\end{array}
\quad 13.175
$$

Hence $13\frac{7}{40} = 13.175$

Question 3.

Arrange the following decimal numbers in ascending order:

(i) 123.8, 74.205, 74.209, 7.4209

(ii) 85.01, 85.1, 85.001, 85.103

Solution:

(i) 7.4209, 74.205, 74.209, 123.8

(ii) 85.001, 85.01, 85.1, 85.103

Question 4.

Arrange the following decimal numbers in descending order:

(i) 6.45, 4.65, 6.405, 64.5, 6.54

(ii) 73.5, 35.7, 7.35, 7.53, 7.035

Solution:

(i) $64.5 > 6.54 > 6.45 > 6.405 > 4.65$

(ii) $73.5 > 35.7 > 7.53 > 7.35 > 7.035$

Question 5.

If the school bags of Garima and Nakul weigh 5.2 kg and 4.832 kg respectively, find

(i) The total weight.

(ii) the difference in weight of the bags.

Solution:

Weight of Garima's bag = 5.2 kg.

Weight of Nakul's bag = 4.832 kg.

(i) Hence total weight of bags = 5.200

$$\begin{array}{r} + \quad 4.832 \\ \hline 10.032 \quad \text{kg} \end{array}$$

(ii) Difference in weight of bags = 5.200

$$\begin{array}{r} -\ 4.832 \\ \hline 0.368\ \text{kg} \end{array}$$

Question 6.

Evaluate the following:

(i) 31.42 – 17.853 – 6.43

(ii) 13.01 – 5.428 – 3.703 + 2.99.

Solution:

(i) 31.42 – 17.853 – 6.43

$$\begin{array}{r} 31.420 \\ -17.853 \\ \hline 13.567 \end{array}$$

$$\begin{array}{r} 13.567 \\ -\ 6.430 \\ \hline 7.137 \end{array}$$

(ii) 13.01 – 5.428 – 3.703 + 2.99.

$$\begin{array}{r} 13.010 \\ -5.428 \\ \hline 7.582 \end{array}$$

7.582

$$
\begin{array}{r}
-\ 3.703 \\
\hline
3.879 \\
\hline
3.879 \\
+\ 2.990 \\
\hline
6.869 \\
\hline
\end{array}
$$

Question 7.

By how much does the sum of 15.453 and 31.657 exceed the sum of 18.47 and 19.506 ?

Solution:

$$
\begin{array}{lr}
\text{Sum of} & 15.453 \\
 & +\ 31.647 \\
 & \hline
\text{Total} & 47.100
\end{array}
$$

$$
\begin{array}{lr}
\text{Sum of} & 18.470 \\
 & +\ 19.506 \\
 & \hline
\text{Total} & 37.976
\end{array}
$$

$$
\begin{array}{lr}
\text{Difference} = & 47.100 \\
 & -\ 37.976 \\
 & \hline
 & 9.124
\end{array}
$$

Question 8.

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

Solution:

Distance travelled everyday

= 20km 50m = 20km + 50m

= 20km + $\frac{50}{1000}$ km

= 20km + 0.050 km $[\frac{1}{1000}\ km = 0.001km]$

= (20 + 0.050) km = 20.050 km

Distance travelled by bus

= 10km 200m = 10km + 200m

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

= 10km + 0.200km $\left[\because \frac{1}{1000}\ km = 0.001km\right]$

= $(10 + 0.200)km$ = 10.200km

∴ Distance travelled by auto

= 20.050 km – 10.200km = 9.850km

$$\begin{array}{rrrrrrrr} & 1 & 9 & & & 10 & & \\ & 2 & 0 & . & 0 & 5 & 0 & \text{km} \\ - & 1 & 0 & . & 2 & 0 & 0 & \text{km} \end{array}$$

= 9 . 8 5 0 km

Question 9.

Ravi purchased 5kg 400g rice, 2kg 20g sugar and 10kg 850g flour (aata). Find the total weight of his purchases.

Solution:

Weight of rice purchased

= 5kg 400g = 5kg + 400g

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

= 5kg + 0.400kg

= (5 + 0.400)kg = 5.400kg

Weight of sugar purchased

= 2kg 20g = 2kg + 20g

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

= 2kg + 0.020 kg = 2.020 kg

Weight of flour purchased

= 10kg 850g = 10kg + 850g

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

= 10kg + 0.850 kg

∴ Total weight of his purchases is

$$
\begin{array}{rrrrrrrrr}
 & & 1 & & & & & & \\
 & & 5 & . & 4 & 0 & 0 & \text{kg} \\
+ & & 2 & . & 0 & 2 & 0 & \text{kg} \\
+ & 1 & 0 & . & 8 & 5 & 0 & \text{kg} \\
= & 1 & 8 & . & 2 & 7 & 0 & \text{kg}
\end{array}
$$

Question 10.

1kg of pure milk contains 0.263 kg of fat. How much fat is there 15.5 kg of milk ?

Solution:

1 kg of pure milk contains fat = 0.263kg

∴ 15.5 kg of milk contain fat

$$
\begin{array}{r}
0.263 \\
\times\ 15.5 \\
\hline
01315 \\
01315\times \\
0263\times\times \\
\hline
4.0765\ \text{kg} \\
\hline
\end{array}
$$

Question 11.

The product of two numbers is 15.275. If one number is 4.7, find the other.

Solution:

The product of two number = 15.275

One number = 4.7

∴ Then Other is = $\frac{15.275}{4.7}$ = 3.25