CHAPTER: 2
FRACTION & DECIMALS

SOLUTIONS:

EXERCISE 2.1

Q1. Solve

(i) $2-\frac{3}{5}$

Solution:=

$2-\frac{3}{5}$

$=\frac{2}{1}-\frac{3}{5}$

L.C.M of denominators 1 and 5

= 5

Then,

$=\frac{2}{1}-\frac{3}{5}$

$=\frac{(2\times5)}{(1\times5)}-\frac{(3\times1)}{(5\times1)}$

$=\frac{10}{5}-\frac{3}{5}$

$=\frac{10-3}{5}$

$=\frac{7}{5}$ OR $1\frac{2}{5}$

(ii) $4+\frac{7}{8}$

Solution:

$4+\frac{7}{8}$

$=\frac{4}{1}+\frac{7}{8}$

$$\begin{array}{r|l} 5 & 1,5 \\ \hline & 1,1 \end{array}$$

L.C.M=5

$= \frac{(4\times8)}{(1\times8)} + \frac{(7\times1)}{(8\times1)}$

$= \frac{32}{8} + \frac{7}{8}$

$= \frac{32+7}{8}$

$= \frac{39}{8}$

$= 4\frac{7}{8}$

(iii) $\frac{3}{5} + \frac{2}{7}$

Solution:

$\frac{3}{5} + \frac{2}{7}$

$= \frac{3\times7}{5\times7} + \frac{2\times5}{7\times5}$

$= \frac{21}{35} + \frac{10}{35}$

$= \frac{21+10}{35}$

$= \frac{31}{35}$

(iv) $\frac{9}{11} - \frac{4}{15}$

Solution:

L.C.M of 11 and 15 =165 | L.C.M=11×15

$= \frac{9\times15}{11\times15} - \frac{4\times11}{15\times11}$

$= \frac{135}{165} - \frac{44}{165}$

$= \frac{135-44}{165}$

$= \frac{91}{165}$

(v) $\frac{7}{10} + \frac{2}{5} + \frac{3}{2}$

Solution:

$\frac{7}{10} + \frac{2}{5} + \frac{3}{2}$

L.C.M of denominators 10,5,2=10

$=\frac{7}{10} + \frac{2}{5} + \frac{3}{2}$

$=\frac{7\times1}{10\times1} + \frac{2\times2}{5\times2} + \frac{3\times5}{2\times5}$

$=\frac{7}{10} + \frac{4}{10} + \frac{15}{10}$

$=\frac{7+4+15}{10}$

$=\frac{26}{10}$

$=\frac{13}{5}$ (Reduced to simplest form)

$=\frac{13}{5}$ OR $2\frac{3}{5}$

2	10,5,2
5	5,5,1
	1,1,1

L.C.M=2× 5=10

(vi) $2\frac{2}{3} + 3\frac{1}{2}$

Solution:

$=\frac{8}{3} + \frac{7}{2}$

$=\frac{8\times2}{3\times2} + \frac{7\times3}{2\times3}$

$=\frac{16}{6} + \frac{21}{6}$

$=\frac{16+21}{6}$

$=\frac{37}{6}$

$=6\frac{1}{6}$

(vii) $8\frac{1}{2} - 3\frac{5}{8}$

Solution:

$8\frac{1}{2} - 3\frac{5}{8}$

$=\frac{17}{2} - \frac{29}{8}$ [converting into improper fraction}]

$=\frac{17\times4}{2\times4} + \frac{29\times1}{8\times1}$

$=\frac{68}{8} - \frac{29}{8}$

$= \frac{68-29}{8}$

$=\frac{39}{8}$ OR $4\frac{7}{8}$

L.C.M of 2 and 8

2	2,8
2	1,4
	1,2

$=2\times2\times2$

L.C.M=8

Q2. Arrange the following in descending order.

(i) $\frac{2}{9}, \frac{2}{3}, \frac{8}{21}$

Sol^{n}: $\frac{2}{9}, \frac{2}{3}, \frac{8}{21}$

L.C.M. of 9,3,21 =63

Then,

$\frac{2\times7}{9\times7}, \frac{2\times21}{3\times21}, \frac{8\times3}{21\times3}$

3	9,3,21
3	3,1,7
7	1,1,7
	1,1

$= \frac{14}{63}, \frac{42}{63}, \frac{24}{63}$

$= \frac{42}{63} > \frac{24}{63} > \frac{14}{63}$

$= \frac{2}{3} > \frac{8}{21} > \frac{2}{9}$

(ii) $\frac{1}{5}, \frac{3}{7}, \frac{7}{10}$

Sol^{n}: $\frac{1}{5}, \frac{3}{7}, \frac{7}{10}$

L.C.M. of 5,7,10 = 70

5	5,7,10
2	1,7,2
7	1,7,1
	1,1

Then,

$= \frac{1\times14}{5\times14}, \frac{3\times10}{7\times10}, \frac{7\times7}{10\times7}$

$= \frac{14}{70}, \frac{30}{70}, \frac{49}{70}$

$= \frac{49}{70} > \frac{30}{70} > \frac{14}{70}$

$= \frac{7}{10}, \frac{3}{7}, \frac{1}{5}$

Q3. In a "magic square" the sum of the numbers in each row, in each column and along the diagonals is the same. Is this magic square?

$\frac{4}{11}$	$\frac{9}{11}$	$\frac{2}{11}$
$\frac{3}{11}$	$\frac{5}{11}$	$\frac{7}{11}$
$\frac{8}{11}$	$\frac{1}{11}$	$\frac{6}{11}$

Sum of first row $= \frac{4}{11} + \frac{9}{11} + \frac{2}{11}$

$= \frac{4+9+2}{11}$

$= \frac{15}{11}$

Sum of the second row $= \frac{3}{11} + \frac{5}{11} + \frac{7}{11}$

$= \frac{3+5+7}{11}$

$= \frac{15}{11}$

Sum of the third row $= \frac{8}{11} + \frac{1}{11} + \frac{6}{11}$

$= \frac{8+1+6}{11}$

$= \frac{15}{11}$

Sum of the first column $= \frac{4}{11} + \frac{3}{11} + \frac{8}{11}$

$= \frac{4+3+8}{11}$

$= \frac{15}{11}$

Sum of the second column $= \frac{9}{11} + \frac{5}{11} + \frac{1}{11}$

$= \frac{9+5+1}{11}$

$= \frac{15}{11}$

Sum of the third column $= \frac{2}{11} + \frac{7}{11} + \frac{6}{11}$

$= \frac{2+7+6}{11}$

$= \frac{15}{11}$

Sum of the diagonal $= \frac{4}{11} + \frac{5}{11} + \frac{6}{11}$

$= \frac{4+5+6}{11}$

$= \frac{15}{11}$

Sum of the other diagonal $= \frac{2}{11} + \frac{5}{11} + \frac{8}{11}$

$= \frac{2+5+8}{11}$

$= \frac{15}{11}$

The sum of each row, each column and along the diagonals are all $\frac{15}{11}$

Therefore, it is a magic square.

Q4. A rectangular sheet of paper is $12\frac{1}{2}$cm long and $10\frac{2}{3}$cm wide. Find its perimeter.

$12\frac{1}{2}$

$10\frac{2}{3}$

Sol^{n}: Length of the rectangular sheet $= 12\frac{1}{2}$cm

$= \frac{25}{2}$cm

Breadth of the rectangular sheet $= 10\frac{2}{3}$cm

$= \frac{32}{3}$cm

We have,

Perimeter of a rectangle $= 2\,(L + B)$

$= 2 \times (\frac{25}{2} + \frac{32}{3})$

$= 2 \times \{\frac{(25\times3)+(32\times2)}{6}\}$

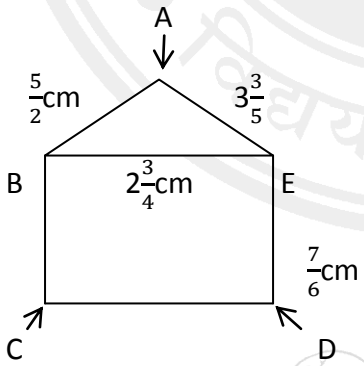
$= 2 \times (\frac{75+64}{6})$

$= \cancel{2} \times \frac{139}{3\,\cancel{6}}$

$= \frac{139}{3}$ or $46\frac{1}{3}$

$\therefore$ The perimeter of the rectangular sheet is $46\frac{1}{3}$cm.

Q5. Find the perimeter of



Sol^{n}: (i) in $\triangle$ ABE

Given, AB $= \frac{5}{2}$cm

BE $= 2\frac{3}{4}$cm $= \frac{11}{4}$cm

AE $= 3\frac{3}{5}$cm $= \frac{18}{5}$cm

To find the perimeter of $\triangle$ ABE

Perimeter of $\triangle$ ABE = AB + BE + AE

$= (\frac{5}{2} + \frac{11}{4} + \frac{18}{5})$ cm

$= \frac{(5\times10)+(11\times5)+(18\times4)}{20}$cm

$= (\frac{50+55+72}{20})$ cm

$= \frac{177}{20}$ cm or $8\frac{17}{20}$cm

(ii) In rectangle BCDE

Sol^{n}: Given,

Length $= 2\frac{3}{4}$cm $= \frac{11}{4}$cm

Width $= \frac{7}{6}$cm

To find,

Perimeter =?

Perimeter of a rectangle = 2 (length × width)

$= 2\ (\frac{11}{4} \times \frac{7}{6})$ cm

$= 2\ \{\frac{(11\times3)+(7\times2)}{12}\}$ cm

$= 2\ (\frac{33+14}{12})$ cm

$= \cancel{2} \times \frac{47}{6\ \cancel{12}}$cm

$= \frac{47}{6}$ cm or $7\frac{5}{6}$cm

2	4,6
2	2,3
3	1,3
	1,1

$= 2\times2\times3 = 12$

Now, the perimeter of triangle ABE is $\frac{177}{20}$ cm

And, perimeter of a rectangle BCDE is $\frac{47}{6}$ cm

Comparing,

$\frac{177}{20}, \frac{47}{6}$

$= \frac{177\times3}{20\times3}, \frac{47\times10}{6\times10}$

$= \frac{531}{60}, \frac{470}{60}$

$\frac{531}{60} > \frac{470}{60}$

$\frac{177}{20} > \frac{47}{6}$

2	20,6
2	10,3
5	5,3
3	1,3
	1,1

$\therefore$ Perimeter of triangle is greater than perimeter of rectangle. = 2×2×5×3 = 60

Q6. Salil wants to put a picture in a frame. The picture is $7\frac{3}{5}$ cm wide. To fit the frame the picture cannot be more than $7\frac{3}{10}$cm wide. How much the picture should be trimmed?

Sol^{n}: Given,

Width of the picture = $7\frac{3}{5}$ cm = $\frac{38}{5}$cm

Width of the frame = $7\frac{3}{10}$cm = $\frac{73}{10}$cm

Then,

As the picture should be trimmed,

We should subtract,

= $(\frac{38}{5} - \frac{73}{10})$ cm

= $\{\frac{(38\times2)-(73\times1)}{10}\}$

5	5,10
	1,2

= 5×1×2 = 10

$\therefore$ The picture to be trimmed by $\frac{3}{10}$cm.

Q7. Ritu ate $\frac{3}{5}$ part of an apple and the remaining apple was eaten by her brother Somu. How much part of the apple did Somu eat? Who had the larger share? By how much?

Sol^{n}: Part of an apple eaten by Ritu $= \frac{3}{5}$

Remaining part eaten by her brother Somu $= (1 - \frac{3}{5})$

$= (\frac{1}{1} - \frac{3}{5})$

$= \{\frac{(1\times5)-(3\times1)}{5}\}$

$= \frac{5-3}{5}$

$= \frac{2}{5}$

∴The part eaten by Somu is $\frac{2}{5}$

Then, comparing

$\frac{3}{5}$and$\frac{2}{5}$

$\frac{3}{5} > \frac{2}{5}$

Then, $\frac{3}{5} - \frac{2}{5}$

$= \frac{3-2}{5} = \frac{1}{5}$

Therefore, Ritu's share is larger by $\frac{1}{5}$.

Q8. Michael finished colouring a picture in $\frac{7}{12}$ hour and Vaibhav finished colouring the same picture in $\frac{3}{4}$ hour. Who worked longer? By what fraction was it longer?

Solution:

Time taken by Michael= $\frac{7}{12}$ hour

Time taken by Vaibhav= $\frac{3}{4}$ hour

Then,comparing

$\frac{7}{12}$ *and* $\frac{3}{4}$

i.e. $\frac{7\times1}{12\times1}, \frac{3\times3}{4\times3}$

$= \frac{7}{12}, \frac{9}{12}$

So,

$\frac{9}{12} > \frac{7}{12}$

And,

$\frac{9}{12} - \frac{7}{12} = \frac{9-7}{12} = \frac{1 \not{2}}{6 \not{12}} = \frac{1}{6}$

∴ Vaibhav worked longer than Michael by $\frac{1}{6}$ of an hour.

Exercise 2.2

Q1. Which of the drawings (a) to (d) show:

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

(ii) $2 \times \frac{1}{2}$

(iii) $3 \times \frac{2}{3}$

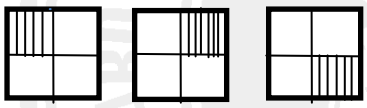
(iv) $3 \times \frac{1}{4}$

(a) 

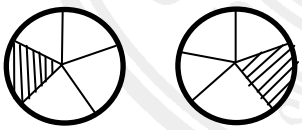
Shows (iii) $3 \times \frac{2}{3}$

(b) 

Shows (ii) $2 \times \frac{1}{2}$

(c) 

Shows (iv) $3 \times \frac{1}{4}$

(d) 

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

Q2. Some pictures (a) to (c) are given below. Tell which of them show:

(i) $3 \times \frac{1}{5} = \frac{3}{5}$

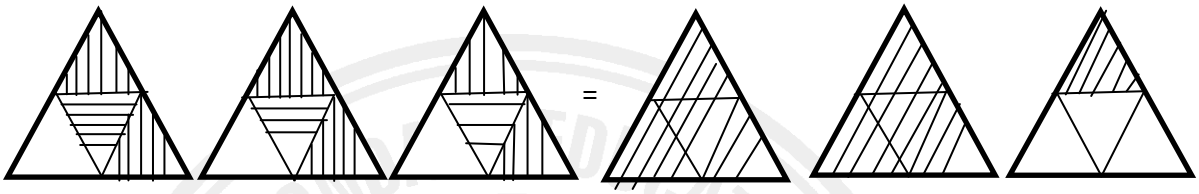
(ii) $2 \times \frac{1}{3} = \frac{2}{3}$

(iii) $3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$

(a)

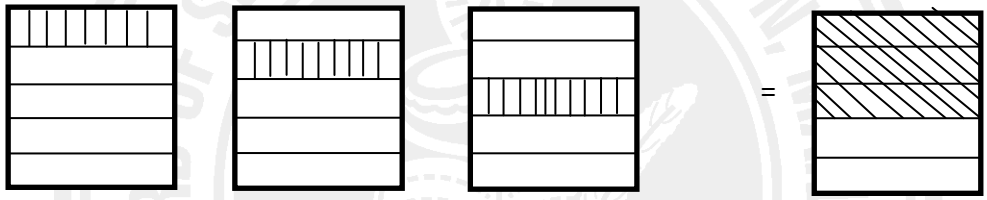
Shows $2 \times \frac{1}{3} = \frac{2}{3}$

(b)



Shows $3 \times \frac{3}{4} = 2\frac{1}{4}$

(c)



Shows $3 \times \frac{1}{5} = \frac{3}{5}$

Q3. Multiply and reduce to lowest form and convert into a mixed fraction.

(i) $7 \times \frac{3}{5}$

Sol^n: $= 7 \times \frac{3}{5}$

$= \frac{7}{1} \times \frac{3}{5}$

$= \frac{21}{5}$

$= 4\frac{1}{5}$

(ii) $4 \times \frac{1}{3}$

Sol^n: $4 \times \frac{1}{3}$

$= 4 \times \frac{1}{3}$

$= \frac{4}{1} \times \frac{1}{3}$

$= \frac{4}{3}$

$= 1\frac{1}{3}$

(iii) $2 \times \frac{6}{7}$

Sol^{n}: $2 \times \frac{6}{7}$

$= 2 \times \frac{6}{7}$

$= \frac{2}{1} \times \frac{6}{7}$

$= \frac{12}{7}$

$= 1\frac{5}{7}$

(iv) $5 \times \frac{2}{9}$

Sol^{n}: $5 \times \frac{2}{9}$

$= 5 \times \frac{2}{9}$

$= \frac{5}{1} \times \frac{2}{9}$

$= \frac{10}{9}$

$= 1\frac{1}{9}$

(v) $\frac{2}{3} \times 4$

Sol^{n}: $\frac{2}{3} \times 4$

$= \frac{2}{3} \times 4$

$= \frac{2}{3} \times \frac{4}{1}$

$= \frac{8}{3}$

$= 2\frac{2}{3}$

(vi) $\frac{5}{2} \times 6$

Sol^{n}: $\frac{5}{2} \times 6$

$= \frac{5}{2} \times 6$

$= \frac{5}{2} \times \frac{6}{1}$

$= \frac{30}{2}$

$= 15$

(vii) $11 \times \frac{4}{7}$

Sol^{n}: $11 \times \frac{4}{7}$

$= 11 \times \frac{4}{7}$

$= \frac{11}{1} \times \frac{4}{7}$

$= \frac{44}{7}$

$= 6\frac{2}{7}$

(viii) $20 \times \frac{4}{5}$

Sol^{n}: $20 \times \frac{4}{5}$

$= 20 \times \frac{4}{5}$

$= \frac{20}{1} \times \frac{4}{5}$

$= \frac{80}{5}$

$= 16$

(ix) $13 \times \frac{1}{3}$

Sol^{n}: $13 \times \frac{1}{3}$

$= 13 \times \frac{1}{3}$

$= \frac{13}{1} \times \frac{1}{3}$

$= \frac{13}{3}$

$= 4\frac{1}{3}$

(x) $15 \times \frac{3}{5}$

Sol^{n}: $15 \times \frac{3}{5}$

$= 15 \times \frac{3}{5}$

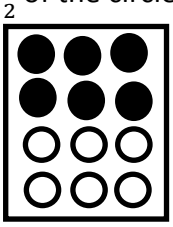
$= \frac{15}{1} \times \frac{3}{5}$

$= \frac{45}{5}$

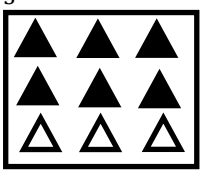
$= 9$

Q4. Shade

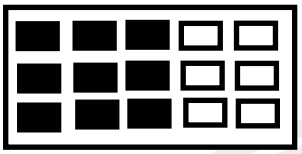
(i) $\frac{1}{2}$ of the circle in the box



(ii) $\frac{2}{3}$ of the tringle in box



(iii) $\frac{3}{5}$ of the square in the box



Q5. Find

(a) $\frac{1}{2}$ of

(i) 24

(ii) 46

(i) $\frac{1}{2}$ of 24

Sol^{n}: $\frac{1}{2}$ of 24

$= \frac{1}{\cancel{2}_{1}} \times \cancel{24}^{12}$

$= \frac{12}{1}$

$= 12$

(ii) $\frac{1}{2}$ of 46

Sol^{n}: $\frac{1}{2}$ of 46

$= \frac{1}{\cancel{2}_{1}} \times \cancel{46}^{23}$

$= \frac{23}{1}$

$= 23$

(b) $\frac{2}{3}$ of

(i) 18

(ii) 27

(i) $\frac{2}{3}$ of 18

Sol^{n}: $\frac{2}{3}$ of 18

$= \frac{2}{\cancel{3}\ 1} \times \cancel{18}^{6}$

$= \frac{2\times 6}{1}$

$= 12$

(ii) $\frac{2}{3}$ of 27

Sol^{n}: $\frac{2}{3}$ of 27

$= \frac{2}{\cancel{3}\ 1} \times \cancel{27}^{9}$

$= \frac{2\times 9}{1}$

$= 18$

(c) $\frac{3}{4}$ of

(i) 16

(ii) 24

(i) $\frac{3}{4}$ of 16

Sol^{n}: $\frac{3}{4}$ of 16

$= \frac{3}{\cancel{4}\ 1} \times \cancel{16}^{4}$

$= \frac{3\times 4}{1}$

$= 12$

(ii) $\frac{3}{4}$ of 36

Sol^{n}: $\frac{3}{4}$ of 36

$= \frac{3}{\cancel{4}\ 1} \times \cancel{36}^{9}$

$= \frac{3\times 9}{1}$

$= 27$

(d) $\frac{4}{5}$ of

(i) 20

Sol^{n}: $\frac{4}{5}$ of 20

$= \frac{4}{\cancel{5}\ 1} \times \cancel{20}^{4}$

$= \frac{4\times4}{1}$

$= 16$

(ii) 35

Sol^{n}: $\frac{4}{5}$ of 35

$= \frac{4}{\cancel{5}\ 1}$ of $\cancel{35}^{7}$

$= 4 \times 7$

$= 28$

Q6. Multiply and express as a mixed fraction.

(a) $3 \times 5\frac{1}{5}$

Sol^{n}: $3 \times 5\frac{1}{5}$

$= 3 \times \frac{26}{5}$

$= \frac{3}{1} \times \frac{26}{5}$

$= \frac{78}{5}$

$= 15\frac{3}{5}$

(b) $5 \times 6\frac{3}{4}$

Sol^{n}: $5 \times 6\frac{3}{4}$

$= 5 \times \frac{27}{4}$

$= \frac{5}{1} \times \frac{27}{4}$

$= \frac{135}{4}$

$= 33\frac{3}{4}$

(c) $7 \times 2\frac{1}{4}$

Sol^n: $7 \times 2\frac{1}{4}$

$= 7 \times \frac{9}{4}$

$= \frac{7}{1} \times \frac{9}{4}$

$= \frac{63}{4}$

$= 15\frac{3}{4}$

(d) $4 \times 6\frac{1}{3}$

Sol^n: $4 \times 6\frac{1}{3}$

$= 4 \times \frac{19}{3}$

$= \frac{4}{1} \times \frac{19}{3}$

$= \frac{76}{3}$

$= 25\frac{1}{3}$

(e) $3\frac{1}{4} \times 6$

Sol^n: $3\frac{1}{4} \times 6$

$= \frac{13}{4} \times \frac{6}{1}$

$= \frac{\cancel{78}^{39}}{\cancel{4}_{2}}$

$= \frac{39}{2}$

$= 19\frac{1}{2}$

(f) $3\frac{2}{5} \times 8$

Sol^n: $3\frac{2}{5} \times 8$

$= \frac{17}{5} \times \frac{8}{1}$

$= \frac{136}{5}$

$= 27\frac{1}{5}$

Q7. Find

(a) $\frac{1}{2}$ of

(i) $2\frac{3}{4}$

(ii) $4\frac{2}{9}$

(i) $\frac{1}{2}$ of $2\frac{3}{4}$

Sol^n: $\frac{1}{2} \times 2\frac{3}{4}$

$= \frac{1}{2} \times \frac{11}{4}$

$= \frac{11}{8}$

$= 1\frac{3}{8}$

(ii) $\frac{1}{2}$ of $4\frac{2}{9}$

Sol^n: $\frac{1}{2} \times 4\frac{2}{9}$

$= \frac{1}{2} \times \frac{38}{9}$

$= \frac{\cancel{38}^{19}}{\cancel{18}_{9}}$

$= \frac{19}{9}$

$= 2\frac{1}{9}$

(b) $\frac{5}{8}$ of

(i) $3\frac{5}{6}$

(ii) $9\frac{2}{3}$

(i) $\frac{5}{8}$ of $3\frac{5}{6}$

Sol^n: $\frac{5}{8} \times 3\frac{5}{6}$

$= \frac{5}{8} \times \frac{23}{6}$

$= \frac{115}{48}$

$= 2\frac{19}{48}$

(ii) $\frac{5}{8}$ of $9\frac{2}{3}$

Sol^n: $\frac{5}{8} \times 9\frac{2}{3}$

$= \frac{5}{8} \times \frac{29}{3}$

$= \frac{145}{24}$

$= 6\frac{1}{24}$

Q8. Vidya and Pratap went for a picnic. Their mother gave them a water bottle that contained 5 litres of water. Vidya consumed $\frac{2}{5}$ of the water. Pratap consumed the remaining water.

(i) How much water did Vidya drink?

Sol^{n}: Here,

The water bottles contained 5 litres of water

Vidya consumed $= \frac{2}{5}$ of the water

$= \frac{2}{5}$ of 5 litres

$= \frac{2}{\cancel{5}} \times \cancel{5}$

$= 2$

$\therefore$ Vidya drank 2 litres of water

(ii) What fraction of the total quantity of water did Pratap drink?

Sol^{n}: Pratap consumed the remaining water

Pratap consumed $= (5 - 2)$ litres

$= 3$ litres

$\therefore$ The fraction of water Pratap drank is $\frac{3}{5}$ litres of the total quantity.

EXERCISE 2.3

1. Find

i) $\frac{1}{4}$ of

a) $\frac{1}{4}$ (b)$\frac{3}{5}$ (c)$\frac{4}{3}$

(a) $\frac{1}{4}$ of $\frac{1}{4}$

$=\frac{1}{4}\times\frac{1}{4}$

$=\frac{1}{16}$

(b) $\frac{1}{4}$of$\frac{3}{5}$

$=\frac{1}{4}\times\frac{3}{5}$

$=\frac{3}{20}$

(c) $\frac{1}{4}$of$\frac{4}{3}$

$=\frac{1}{\cancel{4}}\times\frac{\cancel{4}}{3}$

$=\frac{1}{3}$

(ii) $\frac{1}{7}$of

a) $\frac{2}{9}$ (b) $\frac{6}{5}$ (c) $\frac{3}{10}$

a)$\frac{1}{7}$of$\frac{2}{9}$

$=\frac{1}{7}\times\frac{2}{9}$

$=\frac{2}{63}$

(b) $\frac{1}{7}$ of $\frac{6}{5}$

$= \frac{1}{7} \times \frac{6}{5}$

$= \frac{6}{35}$

(c) $\frac{1}{7}$ of $\frac{3}{10}$

$= \frac{1}{7} \times \frac{3}{10}$

$= \frac{3}{70}$

Q2. Multiply and reduce to lowest form (if possible)

(i) $\frac{2}{3} \times 2\frac{2}{3}$

Solution: $\frac{2}{3} \times 2\frac{2}{3}$

$= \frac{2}{3} \times \frac{8}{3}$

$= \frac{16}{9}$

$= 1\frac{7}{9}$

(ii) $\frac{2}{7} \times \frac{7}{9}$

Solution: $\frac{2}{7} \times \frac{7}{9}$

$= \frac{2}{7} \times \frac{7}{9}$

$= \frac{\cancel{2}}{1} \times \frac{\cancel{7}}{\cancel{7}} \frac{7}{9}$ OR $\frac{2}{9} \frac{\cancel{14}}{\cancel{63}}$

$= \frac{2}{9}$

(iii) $\frac{3}{8} \times \frac{6}{4}$

Solution: $\frac{3}{8} \times \frac{6}{4}$

$= \frac{3}{8} \times \frac{3}{2} \frac{\cancel{6}}{\cancel{4}}$ OR $\frac{9}{16} \frac{\cancel{18}}{\cancel{32}}$

$= \frac{9}{16}$

(iv) $\frac{9}{5} \times \frac{3}{5}$

Solution: $\frac{9}{5} \times \frac{3}{5}$

$= \frac{27}{25}$

$= 1\frac{2}{25}$

(v) $\frac{1}{3} \times \frac{15}{8}$

Solution: $\frac{1}{3} \times \frac{15}{8}$

$= \frac{1}{1\ \cancel{3}} \times \frac{5\ \cancel{15}}{8}$ OR $\frac{5\ \cancel{15}}{8\ \cancel{24}}$ [dividing by 3]

$= \frac{5}{8}$

(vi) $\frac{11}{2} \times \frac{3}{10}$

Solution: $\frac{11}{2} \times \frac{3}{10}$

$= \frac{11}{2} \times \frac{3}{10}$

$= \frac{33}{22}$

$= 1\frac{13}{20}$

(vii) $\frac{4}{5} \times \frac{12}{7}$

Solution: $\frac{4}{5} \times \frac{12}{7}$

$= \frac{48}{35}$

$= 1\frac{13}{35}$

Q3. Multiply the following fractions:

$(i)\ \frac{2}{5} \times 5\frac{1}{4}$

Solution: $\frac{2}{5} \times 5\frac{1}{4}$

$= \frac{1\ \cancel{2}}{5} \times \frac{21}{2\ \cancel{4}}$

$=\frac{21}{10}$

$=2\frac{1}{10}$

$=2\frac{1}{10}$

(ii)$6\frac{2}{5}\times\frac{7}{9}$

Solution: $6\frac{2}{5}\times\frac{7}{9}$

$=\frac{32}{5}\times\frac{7}{9}$

$=\frac{224}{45}$

$=4\frac{44}{45}$

$(iii)\frac{3}{2}\times 5\frac{1}{3}$

Solution: $\frac{3}{2}\times 5\frac{1}{3}$

$=\frac{3}{2}\times\frac{16}{3}$

$=\frac{8\quad 16}{1\quad 2}$

$=8$

$(iv)\frac{5}{6}\times 2\frac{3}{7}$

Solution: $\frac{5}{6}\times 2\frac{3}{7}$

$=\frac{5}{6}\times\frac{17}{7}$

$=\frac{85}{42}$

$=2\frac{1}{42}$

(V) $3\frac{2}{5} \times \frac{4}{7}$

Solⁿ: $3\frac{2}{5} \times \frac{4}{7}$

$= \frac{17}{5} \times \frac{4}{7}$

$= \frac{68}{35}$

$= 1\frac{33}{35}$

(vi) $2\frac{3}{5} \times 3$

Solution: $2\frac{3}{5} \times 3$

$= \frac{13}{5} \times \frac{3}{1}$

$= \frac{39}{5}$

$= 7\frac{4}{5}$

(vii) $3\frac{4}{7} \times \frac{3}{5}$

Solⁿ: $3\frac{4}{7} \times \frac{3}{5}$

$= \frac{\cancel{25}^{5}}{7} \times \frac{3}{\cancel{5}_{1}}$

$= \frac{5}{7} \times \frac{3}{1}$

$= \frac{15}{7}$

$= 2\frac{1}{7}$

Q4. Which is greater

$(i)\ \frac{2}{7}$of$\frac{3}{4}$ OR $\frac{3}{5}$ of $\frac{5}{8}$

Solution: $\frac{2}{7}$ of$\frac{3}{4}$ OR $\frac{3}{5}$ of $\frac{5}{8}$

$=\frac{2}{7}\times\frac{3}{4}$ OR $\frac{3}{5}\times\frac{5}{8}$

$=\frac{3}{14}$ OR $\frac{3}{8}$

$=\frac{3\times4}{14\times4}$ OR $\frac{3\times7}{8\times7}$ [making the denominators same by taking L.C.M of denominators]

$=\frac{12}{56}$ OR $\frac{21}{56}$

Here,

$\frac{21}{56}>\frac{12}{56}$

∴ $\frac{3}{5}$ of $\frac{5}{8}$ is greater than $\frac{2}{7}$ of $\frac{3}{4}$

2	14, 8
7	7, 4
2	1, 4
2	1, 2
	1, 1

L.C.M=2×7×2×2

=14×4= 56

(ii)$\frac{1}{2}$of $\frac{6}{7}$ OR $\frac{2}{3}$ of $\frac{3}{7}$

Solution: $\frac{1}{2}$ of$\frac{6}{7}$ OR $\frac{2}{3}$ of $\frac{3}{7}$

$=\frac{1}{1}\times\frac{3}{7}$ OR $\frac{2}{1}\times\frac{1}{7}$

$=\frac{3}{7}$ OR $\frac{2}{7}$

Here,

$\frac{3}{7}>\frac{2}{7}$

∴ $\frac{1}{2}$ of $\frac{6}{7}$ is greater than $\frac{2}{3}$ of $\frac{3}{7}$

Q5. Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings is $\frac{3}{4}$ m. Find the distance between the first and the last sapling.

Given,

No. of saplings planted by Saili $= 4$

Distance between two adjacent saplings$=\frac{3}{4}$ m

To find,

Distance between the first and the last sapling= ?

Solution: No. of sapling $= 4$

Distance between the first and the second$= \frac{3}{4}$ m

Distance between the second and the third$= \frac{3}{4}$ m

Distance between the third and the last$= \frac{3}{4}$ m

In order to find the distance between the first and the last saplings, we add the distance between the first second, the second third and the third last

We get,

$(\frac{3}{4}+\frac{3}{4}+\frac{3}{4})m$

$=\frac{3+3+3}{4}$

$=\frac{9}{4}$

$=2\frac{1}{4}$

∴The distance between the first and the last is $2\frac{1}{4}$ m.

Q6. Lipika reads a book for $1\frac{3}{4}$ hours everyday. She reads the entire book in 6 days. How many hours in all were required by her to read the book?

Solution: Time taken by Lipika to read a book in one day$=1\frac{3}{4}$ hours

$=\frac{7}{4}$ hours

No. of days she completed the book= 6 days

∴Time taken by Lipika to read the book=$(\frac{7}{4} \times 6)$ *hours*

$$= \frac{7}{2\ \cancel{4}} \times \frac{3\ \cancel{6}}{1}$$

$$= \frac{7}{2} \times \frac{3}{1}$$

$$= \frac{21}{2}$$

$$= 10\frac{1}{2} \text{ hours}$$

Q7. A car runs 16 km using 1 litre of petrol. How much distance wills it cover using $2\frac{3}{4}$ litres of petrol?

Soln. Here, $2\frac{3}{4} = \frac{11}{4}$ltr

1 ltr ⟶ 16 kms

$\frac{11}{4}$ltr ⟶ $(16 \times \frac{11}{4})$ km

$= (\frac{4\ \cancel{16}}{1} \times \frac{11}{\cancel{4}\ 1})$km

$= (4 \times 11)$

$= 44$ km

∴The distance covered using $2\frac{3}{4}$ litres of petrol $= 44$km

Q8. a) (i) Provide the number in the box $\square$

Such that $\frac{2}{3} \times \boxed{\frac{5}{10}} = \frac{10}{30}$

(ii) The simplest form of the number obtained in $\boxed{\frac{5}{10}} = \frac{1}{2}$

b) (i) Provide the number in the box $\square$

Such that $\frac{3}{5} \times \boxed{\frac{8}{15}} = \frac{24}{75}$

(ii) The simplest form of the number obtained in $\boxed{\frac{8}{15}}$ is $\frac{8}{15}$

Reciprocal of a fraction

The non-zero numbers, whose product with each other is 1, are called reciprocal of each other.

So, reciprocal of $\frac{5}{8}$ is $\frac{8}{5}$ and the reciprocal of $\frac{8}{5}$ is $\frac{5}{8}$.

Reciprocal of a fraction is obtained by inverting it.

Example: $\frac{2}{3}$ reciprocal of $\frac{2}{3}$ is $\frac{3}{2}$

Exercise 2.4

Q1. Find

(i) $12 \div \frac{3}{4}$

Soln: $12 \div \frac{3}{4}$

$= 12 \times$ reciprocal of $\frac{3}{4}$

$= 12 \times \frac{4}{3}$

$= \frac{4\ \cancel{12}}{1} \times \frac{4}{1\ \cancel{3}}$

$= 4 \times 4$

$= 16$

(ii) $14 \div \frac{5}{6}$

Soln: $14 \div \frac{5}{6}$

$= 14 \times \frac{6}{5}$

$= \frac{14}{1} \times \frac{6}{5}$

$= \frac{84}{5}$

$= 16\frac{4}{5}$

(iii) $8 \div \frac{7}{3}$

Soln: $8 \div \frac{7}{3}$

$= 8 \times \frac{3}{7}$

$= \frac{8}{1} \times \frac{3}{7}$

$= \frac{24}{7}$

(iv) $4 \div \frac{8}{3}$

Soln: $4 \div \frac{8}{3}$

$= 4 \times \frac{3}{8}$

$$= \frac{1}{1} \times \frac{3}{2}$$

$$= \frac{3}{2}$$

(v) $3 \div 2\frac{1}{3}$

Soln: $3 \div 2\frac{1}{3}$

$$= 3 \div \frac{7}{3}$$

$$= \frac{3}{1} \times \frac{3}{7}$$

$$= \frac{9}{7}$$

(vi) $5 \div 3\frac{4}{7}$

Soln: $5 \div 3\frac{4}{7}$

$$= 5 \div \frac{25}{7}$$

$$= \frac{1}{1} \times \frac{7}{5}$$

$$= \frac{7}{5}$$

Q2. Find the reciprocal of each of the following fractions. Classify the reciprocal as proper fractions, improper fraction and whole numbers.

(i) $\frac{3}{7}$

Soln: $\frac{3}{7}$

Reciprocal of $\frac{3}{7}$ is $\frac{7}{3}$

i.e. numerator 7 is greater than denominator 3

$\therefore \frac{7}{3}$ is an improper fraction

(ii) $\frac{5}{8}$

Soln: $\frac{5}{8}$

Reciprocal of $\frac{5}{8}$ is $\frac{8}{5}$

$\frac{8}{5}$is an improper fraction

(iii) $\frac{9}{7}$

Soln: $\frac{9}{7}$

Reciprocal of $\frac{9}{7}$ is $\frac{7}{9}$

i.e.numerators is less than denominator

$\therefore \frac{7}{9}$ is a proper fraction

(iv) $\frac{6}{5}$

Soln: $\frac{6}{5}$

Reciprocal of $\frac{6}{5}$ is $\frac{5}{6}$

$\therefore \frac{5}{6}$ is a proper fraction

(v) $\frac{12}{7}$

Soln: $\frac{12}{7}$

Reciprocal of $\frac{12}{7}$ is $\frac{7}{12}$

$\therefore \frac{7}{12}$ is a proper fraction

(vi) $\frac{1}{8}$

Soln: $\frac{1}{8}$

Reciprocal of $\frac{1}{8}$ is $\frac{8}{1}$ or 8

$\therefore$ 8 is not a fraction. So it is a whole number

(vii) $\frac{1}{11}$

Soln: $\frac{1}{11}$

Reciprocal of $\frac{1}{11}$ is $\frac{11}{1}$ or 11

$\therefore$ 11 is a whole number.

Q3. Find

(i) $\frac{7}{3} \div 2$

Sol^{n}: $\frac{7}{3} \div 2$

$= \frac{7}{3} \times \frac{1}{2}$

$= \frac{7}{6}$

(ii) $\frac{4}{9} \div 5$

Sol^{n}: $\frac{4}{9} \div 5$

$= \frac{4}{9} \times \frac{1}{5}$

$= \frac{4}{45}$

(iii) $\frac{6}{13} \div 7$

Sol^{n}: $\frac{6}{13} \div 7$

$= \frac{6}{13} \times \frac{1}{7}$

$= \frac{6}{91}$

(iv) $4\frac{1}{3} \div 3$

Sol^{n}: $4\frac{1}{3} \div 3$

$= \frac{13}{3} \times \frac{1}{3}$

$= \frac{13}{9}$

(v) $3\frac{1}{2} \div 4$

Sol^{n}: $3\frac{1}{2} \div 4$

$= \frac{7}{2} \times \frac{1}{4}$

$= \frac{7}{8}$

(vi) $4\frac{3}{7} \div 7$

Sol^{n}: $4\frac{3}{7} \div 7$

$= \frac{31}{7} \times \frac{1}{7}$

$= \frac{31}{49}$

Q4. Find

(i) $\frac{2}{5} \div \frac{1}{2}$

Soln: $\frac{2}{5} \div \frac{1}{2}$

$= \frac{2}{5} \times \frac{2}{1}$

$= \frac{4}{5}$

(ii) $\frac{4}{9} \div \frac{2}{3}$

Soln: $\frac{4}{9} \div \frac{2}{3}$

$= \frac{2}{3}\frac{\cancel{4}}{\cancel{9}} \times \frac{1}{1}\frac{\cancel{3}}{\cancel{2}}$

$= \frac{2}{3}$

(iii) $\frac{3}{7} \div \frac{8}{7}$

Soln: $\frac{3}{7} \div \frac{8}{7}$

$= \frac{3}{7} \div \frac{8}{7}$

$= \frac{3}{1}\frac{}{\cancel{7}} \times \frac{1}{8}\frac{\cancel{7}}{}$

$= \frac{3}{8}$

(iv) $2\frac{1}{3} \div \frac{3}{5}$

Soln: $2\frac{1}{3} \div \frac{3}{5}$

$= \frac{7}{3} \times \frac{5}{3}$

$= \frac{35}{9}$

(v) $3\frac{1}{2} \div \frac{8}{3}$

Soln: $3\frac{1}{2} \div \frac{8}{3}$

$= \frac{7}{2} \div \frac{8}{3}$

$= \frac{7}{2} \times \frac{3}{8}$

$= \frac{21}{16}$

(vi) $\frac{2}{5} \div 1\frac{1}{2}$

Soln: $\frac{2}{5} \div 1\frac{1}{2}$

$= \frac{2}{5} \div \frac{3}{2}$

$= \frac{2}{5} \times \frac{2}{3}$

$= \frac{4}{15}$

(vii) $3\frac{1}{5} \div 1\frac{2}{3}$

Soln: $3\frac{1}{5} \div 1\frac{2}{3}$

$= \frac{16}{5} \div \frac{5}{3}$

$= \frac{16}{5} \times \frac{3}{5}$

$= \frac{48}{25}$

(viii) $2\frac{1}{5} \div 1\frac{1}{5}$

Soln: $2\frac{1}{5} \div 1\frac{1}{5}$

$= \frac{11}{5} \div \frac{6}{5}$

$= \frac{11}{1} \times \frac{1}{6}$

$= \frac{11}{6}$

Exercise 2.5

Q1. Which is greater

(i) 0.5 or 0.05

Soln: 0.5 or 0.05

Here, $0 = 0$,

$5 > 0$

$\therefore 0.5 > 0.05$

(ii) 0.7 or 0.5

Soln: 0.7 or 0.5

Here, $0 = 0$,

$7 > 5$

$\therefore 0.7 > 0.5$

(iii) 7 or 0.7

Soln: Here, $7 > 0$

$\therefore 7 > 0.7$

(iv) 1.37 or 1.49

Soln: 1.37 or 1.49

Here, $1=1$,

$3<4$

$\therefore 1.37<1.49$

(v) 2.03 or 2.30

Soln: 2.03 or 2.30

Here, $2=2$,

$0<3$

$\therefore 2.03<2.30$

(vi) 0.8 or 0.88

Soln: 0.8 or 0.88

0.80 or 0.88

Here, 8=8,

0<8

∴ 0.80<0.88

Q2. Express as rupees using decimals

(i) 7 paise

Soln: 7 paise

Rs. 1= 100 paise

100 paise = Rs. 1

1 paise = Rs. $\frac{1}{100}$

7 paise = Rs. $\frac{1}{100} \times 7$

= Rs. $\frac{7}{100}$

= Rs. 0.07

(ii) 7 rupees 7 paise

Soln: 7 rupees 7 paise

Rs 1 = 100 paise

1 p = Rs. $\frac{1}{100}$

7 p = Rs. $\frac{1}{100} \times 7$

= Rs. $\frac{7}{100}$

= Rs. 0.07

= Rs (7+0.07)

= Rs. 7.07

(iii) 77 rupees 77 paise

Soln: 77 rupees 77 paise

100 paise = Rs. 1

1 paise = Rs. $\frac{1}{100}$

77 paise = Rs. $\frac{1}{100} \times 77$

= Rs. $\frac{77}{100}$

= Rs. 0.77

= Rs(77 + 0.77)

= Rs. 77.77

(iv) 50 paise

Soln: 50 paise

100 paise = Rs. 1

1 paise = Rs. $\frac{1}{100}$

50 paise = Rs. $\frac{1}{\cancel{100}} \times \cancel{50}$

= Rs. $\frac{5}{10}$

= Rs. 0.5

(v) 235 paise

Soln: 235 psie

100 paise = Rs. 1

1 paise = Rs. $\frac{1}{100}$

235 paise = Rs. $\frac{1}{100} \times 235$

= Rs. $\frac{235}{100}$

= Rs. 2.35

Q3. (i) Express 5 cm in metre and kilometre

Soln: 5 cm in metre

$100 \text{ cm} = 1 \text{ metre}$

$1 \text{ cm} = \frac{1}{100} \text{ m}$

$\therefore 5 \text{ cm} = (\frac{1}{100} \times 5)\text{m}$

$= \frac{5}{100} \text{ m}$

$= 0.05 \text{ m}$

5 cm in kilometre

$100000 \text{ cm} = 1\text{km}$

$1\text{m} = 100\text{cm}$

$1\text{km} = 1000\text{m}$

$1 \text{ cm} = (\frac{1}{100000})\text{km}$

$5 \text{ cm} = (\frac{1}{100000} \times 5) \text{ km}$

$= \frac{5}{100000}$

$= 0.00005 \text{ km}$

(ii) Express 35 mm in cm, m and km

$1 \text{ cm} = 10\text{mm}$

$1\text{m} = 100\text{cm}$

$1\text{km} = 1000\text{m}$

35mm in cm

$10\text{mm} = 1 \text{ cm}$

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

$35\text{mm} = (\frac{1}{10} \times 35) \text{ cm}$

$= \frac{35}{10} \text{ cm}$

$= 3.5 \text{ cm}$

35 mm in m

1000mm $= 1$m

1mm $= (\frac{1}{1000})$ m

35 mm $= (\frac{1}{1000} \times 35)$ m

$= \frac{35}{1000}$ m

$= 0.035$m

35mm in km

1000000mm $= 1$km

1mm $= (\frac{1}{1000000})$ km

35mm $= (\frac{1}{1000000} \times 35)$ km

$= \frac{35}{1000000}$ km

$= 0.000035$ km

Q4. Express in kg

(i) 200gm

Soln: 200gm in kg

We have, 1000 gm $= 1$kg

i.e.1gm $= (\frac{1}{1000})$ kg

$\therefore$ 200 gm $= (\frac{1}{1000} \times 200)$ kg

$= (\frac{200}{1000})$ kg

$= \frac{2}{10}$ kg

$=0.2$ kg

(ii) 3470g

Sol^{n}: 3470g in kg

We have, 1000gm $= 1$kg

i.e. 1gm $= (\frac{1}{1000})$ kg

$\therefore$ 3470g $= (\frac{1}{1000} \times 3470)$ kg

$= (\frac{3470}{1000})$ kg

$= 3.470$ kg

(iii) 4kg 8gm

Soln: 4kg 8gm in kg

We have, 1000gm $= 1$kg

$\Rightarrow 1$ gm $= (\frac{1}{1000})$ kg

$\Rightarrow 8$ gm $= (\frac{1}{1000} \times 8)$ kg

$= \frac{8}{1000}$ kg

$= 0.008$kg

$=4$kg $+ 0.008$kg

$=4.008$kg

Q5. Write the following decimal numbers in the expanded form

(i) 20.03

Soln:

Tens	Ones	Point	Tenths	Hundredths
2	0	.	0	3

$=2 \times 10 + 0 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

(ii) 2.03

Soln:

Ones	Point	Tenths	Hundredths
2	.	0	3

$= 2 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

(iii) 200.03

Soln:

Hundreds	Tens	Ones	Point	Tenths	Hundredths
2	0	0	.	0	3

$= 2 \times 100 + 0 \times 10 + 0 \times 1 \times 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

(iv) 2.034

Soln: 2.034

Ones	Point	Tenths	Hundredths	Thousandths
2	.	0	3	4

$=2 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100} + 4 \times \frac{1}{1000}$

Q6. Write the place value of 2 in the following decimal numbers

(i) 2.56

Soln:

Ones	Point	Tenths	Hundredths
2	.	5	6

The place value of 2 is in ones place

(ii) 21.37

Soln:

Tens	Ones	Point	Tenths	Hundredths
2	1	.	3	7

The place value of 2 is in tens place

(iii) 10.25

Soln:

Tens	Ones	Point	Tenths	Hundredths
1	0	.	2	5

The place value of 2 is in tenths place

(iv) 9.42

Soln:

Ones	Point	Tenths	Hundredths
9	.	4	2

The place value of 2 is in hundredths place

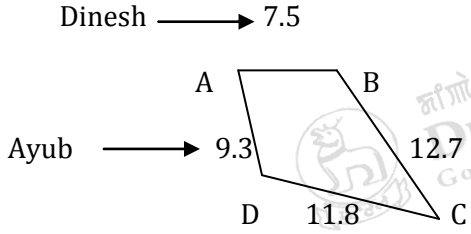
(v) 63.3.52

Soln:

Tens	Ones	Point	Tenths	Hundredths	Thousandths
6	**3**	.	3	5	2

The place value of 2 is in Thousandths place.

Q7. Dinesh went from place A to Place B and from there to place C. A is 7.5 km from B and B is 12.7 km from C. Ayub went from place A to D and from there to place C. D is 9.3 km From A and C is 11.8 km from D. Who Travelled more and by how much?



Soln: Distance travelled by Dinesh $= (7.5 + 12.7)$ km

$= 20.2$ km

Distance travelled by Ayub = (9.3 + 11.8) km

= 21.1 km

Here, 21.1> 20.2

So, Ayub travelled more by (21.1 – 20.2) km, i.e. 0.9km

Q8. Shyama bought 5kg 300gm apples and 3kg 250gm mangoes. Sarala bought 4kg 800gm oranges and 4kg 150gm bananas. Who bought more fruits?

Soln: Fruits bought by Shyama

1kg=1000g

No. of apples = 5kg 300gm

3kg=3×1000g

= 5000gm + 300gm

=3000g

= 5300gm

No. of mangoes = 3kg 250gm

4kg=4×1000g

=3000gm + 250gm

=4000g

= 3250gm

Total = (5300 +3250) gm

5kg=5×1000g

= 8550gm

=5000g

And,

Fruits bought by Sarala

No. of oranges = 4kg 800gm

= 4000gm + 800gm

= 4800gm

No. of bananas = 4 kg 150gm

= 4000gm + 150gm

= 4150gm

Total = (4800 + 4150) gm

= 8950gm

∴ 8950 > 8550, So Sarala bought more fruits than Shayma

Q9. How much less is 28km than 42.6km

Soln; (42.6 – 28) km

= 14.6 km

∴It is 14.6 km less.

Exercise 2.6

Q1. Find

(i) 0.2×6

Soln: 0.2×6

$= \frac{2}{10} \times 6$

$= \frac{12}{10}$

$= 1.2$

(ii) 8×4.6

Soln: $= 8 \times 4.6$

$= 8 \times \frac{46}{10}$

$= \frac{368}{10}$

$= 36.8$

(iii) 2.71×5

Soln: $= 2.71 \times 5$

$= \frac{271}{100} \times 5$

$= \frac{1355}{100}$

$= 13.55$

(iv) 20.1×4

Soln: $= 20.1 \times 4$

$= \frac{201}{10} \times 4$

$= \frac{804}{10}$

$= 80.4$

(v) 0.05×7

Soln: $= 0.05 \times 7$

$= \frac{5}{100} \times 7$

$= \frac{35}{100}$

$= 0.35$

(vi) 211.02×4

Soln: $= 211.02 \times 4$

$= \frac{21102}{100} \times 4$

$= \frac{84408}{100}$

$= 844.08$

(vii) 2×0.86

Sol^{n}. 2×0.86

$= 2 \times \frac{86}{100}$

$= \frac{172}{100}$

$= 1.72$

Q2. Find the area of rectangle whose length is 5.7 cm and breath is 3cm.

Soln: Given, length =5.7cm, breadth = 3cm

To find Area =?

By law,

Area = length × breath

$= (5.7 \times 3)\ cm^2$

$=17.1cm^2$

Q3. Find

(i) 1.3×10

Soln: $= 1.3 \times 10$

$= \frac{13}{\cancel{10}} \times \cancel{10}$

$= 13$

(ii) 36.8×10

Soln: $= 36.8 \times 10$

$= \frac{368}{\cancel{10}} \times \cancel{10}$

$= 368$

(iii) 153.7×10

Soln: $= 153.7 \times 10$

$= \frac{1537}{\cancel{10}} \times \cancel{10}$

$= 1537$

(iv) 168.07×10

Soln: $= 168.07 \times 10$

$= \frac{16807}{10\cancel{0}} \times 1\cancel{0}$

$= 1680.7$

(v) 31.1×100

Soln: $= 31.1 \times 100$

$= \frac{311}{1\cancel{0}} \times 10\cancel{0}$

$= 3110$

(vi) 156.1×100

Soln: $= 156.1 \times 100$

$= \frac{1561}{1\cancel{0}} \times 10\cancel{0}$

$= 15610$

(vii) 3.62×100

Soln: $= 3.62 \times 100$

$= \frac{362}{\cancel{100}} \times \cancel{100}$

$= 362$

(viii) 43.07×100

Soln: $= 43.07 \times 100$

$= \frac{4307}{\cancel{100}} \times \cancel{100}$

$= 4307$

(ix) 0.5×10

Soln: $= 0.5 \times 10$

$= \frac{5}{\cancel{10}} \times \cancel{10}$

$= 5$

(x) 0.08×10

Soln: $= 0.08 \times 10$

$= \frac{8}{10\cancel{0}} \times 1\cancel{0}$

$= \frac{8}{10}$

$= 0.8$

(xi) 0.9×100

Soln: $= 0.9 \times 100$

$= \frac{9}{1\cancel{0}} \times 10\cancel{0}$

$= 90$

(xii) 0.03×1000

Soln: $= 0.03 \times 1000$

$= \frac{3}{1\cancel{00}} \times 10\cancel{00}$

$= 30$

Q4. A two wheeler covers a distance of 55.3 km in one litre of petrol. How much distance will cover in 10 litres of petrol?

Soln: Distance covered in one litre of petrol = 55.3km

1ltr of petrol = 55.3km

10 lts of petrols = (55.3km × 10) km

= 553 km

∴ Distance covered in 10 ltr of petrol is 553 km

Q5. Find

(i) 2.5×0.3

Soln: $= 2.5 \times 0.3$

$= \frac{25}{10} \times \frac{3}{10}$

$= \frac{75}{100}$

$= 0.75$

(ii) 0.1×51.7

Soln: $= 0.1 \times 51.7$

$= \frac{1}{10} \times \frac{517}{10}$

$= \frac{517}{100}$

$= 5.17$

(iii) 0.2×316.8

Soln: $= 0.2 \times 316.8$

$= \frac{2}{10} \times \frac{3168}{10}$

$= \frac{6336}{100}$

$= 63.36$

(iv) 1.3×3.1

Soln: $= 1.3 \times 3.1$

$= \frac{13}{10} \times \frac{31}{10}$

$= \frac{403}{100}$

$= 4.03$

(v) 0.5×0.05

Soln: $= 0.5 \times 0.05$

$= \frac{5}{10} \times \frac{5}{100}$

$= \frac{25}{1000}$

$= 0.025$

(vi) 11.2×0.15

Soln: $= 11.2 \times 0.15$

$= \frac{112}{10} \times \frac{15}{100}$

$= \frac{1680}{1000}$

$= 1.680$

$= 1.68$

(vii) 1.07×0.02

Soln: $= 1.07 \times 0.02$

$= \frac{107}{100} \times \frac{2}{100}$

$= \frac{214}{10000}$

$= 0.0214$

(viii) 10.05×1.05

Soln: $= 10.05 \times 1.05$

$= \frac{1005}{100} \times \frac{105}{100}$

$= \frac{105525}{10000}$

$= 10.5525$

(ix) 101.01×0.01

Soln: $= 101.01 \times 0.01$

$= \frac{10101}{100} \times \frac{1}{100}$

$= \frac{10101}{10000}$

$= 1.0101$

(x) 100.01×1.1

Sol^{n}: 100.01×1.1

$= \frac{10001}{100} \times \frac{11}{10}$

$= \frac{10001}{1000}$

$= 110.011$

EXERCISE 2.7

Q1. Find.

(i) $0.4 \div 2$

Sol^n. $0.4 \div 2 = \frac{4}{10} \div 2$

$= \frac{2 \cancel{4}}{\cancel{10}} \times \frac{1}{1 \cancel{2}} = \frac{2}{10}$

$= 0.2$

(ii) $0.35 \div 5$

Sol^n. $0.35 \div 5 = \frac{35}{100} \div 5$

$= \frac{7 \cancel{35}}{100} \times \frac{1}{1 \cancel{5}}$

$= \frac{7}{100}$

$= 0.07$

(iii) $2.48 \div 4$

Sol^n. $2.48 \div 4 = \frac{248}{100} \div 4$

$= \frac{2 \cancel{248}}{100} \times \frac{1}{\cancel{4}}$

$= \frac{62}{100}$

$= 0.62$

(iv) $65.4 \div 6$

Sol^n. $65.4 \div 6 = \frac{654}{10} \div 6$

$= \frac{109 \cancel{654}}{10} \times \frac{1}{1 \cancel{6}}$

$= \frac{109}{10}$

$= 10.9$

(v) 651.2 ÷ 4

Sol^{n}. $651.2 \div 4 = \frac{6512}{10} \div 4$

$= \frac{1628}{\cancel{6512}\ 10} \times \frac{1}{\cancel{4}}$

$= \frac{1628}{10}$

$= 162.8$

(vi) 14.49÷7

Sol^{n}. $14.49 \div 7 = \frac{1449}{100} \div 7$

$= \frac{207}{\cancel{1449}\ 100} \times \frac{1}{\cancel{7}}$

$= \frac{207}{100}$

$= 2.07$

(vii) 3.96÷4

Sol^{n}: 3.96÷4

$= \frac{\cancel{396}\ 99}{100} \times \frac{1}{\cancel{4}\ 1}$

$= \frac{99}{100}$

$= 0.99$

(viii) 0.80 ÷ 5

Sol^{n}: 0.80÷5

$= \frac{80}{100} \div 5$

$= \frac{\cancel{80}}{100} \div \frac{1}{\cancel{5}\ 1}$

$= \frac{16}{100}$

$= 0.16$

Q2. Find.

(i) 4.8 ÷ 10

Sol^{n}. 4.8 ÷ 10 = $\frac{48}{10}$ ÷ 10

= $\frac{48}{10}$ x $\frac{1}{10}$

= $\frac{48}{100}$

= 0.48

(ii) 52.5 ÷ 10

Sol^{n}. 52.5 ÷ 10 = $\frac{525}{10}$ ÷ 10

= $\frac{525}{10}$ x $\frac{1}{10}$

= $\frac{525}{100}$

= 5.25

(iii) 0.7 ÷ 10

Sol^{n}. 0.7 ÷ 10 = $\frac{7}{10}$ ÷ 10

= $\frac{7}{10}$ x $\frac{1}{10}$

= $\frac{7}{100}$

= 0.07

(iv) 33.1 ÷ 10

Sol^{n}. 33.1 ÷ 10 = $\frac{331}{10}$ ÷ 10

= $\frac{331}{10}$ x $\frac{1}{10}$

= $\frac{331}{100}$

= 3.31

(v) 272.23 ÷ 10

Sol^{n}. 272.23 ÷ 10 = $\frac{27223}{100}$ ÷ 10

= $\frac{27223}{100}$ x $\frac{1}{10}$

= $\frac{27223}{1000}$

= 27.223

(vi) 0.56 ÷ 10

Sol^{n}. 0.56 ÷ 10 = $\frac{56}{100}$ ÷ 10

= $\frac{56}{100}$ x $\frac{1}{10}$

= $\frac{56}{1000}$

= 0.056

(vii) 3.97 ÷ 10

Sol^{n}. 3.97 ÷ 10 = $\frac{397}{100}$ ÷ 10

= $\frac{397}{100}$ x $\frac{1}{10}$

= $\frac{397}{1000}$

= 0.397

Q3. Find.

(i) 2.7 ÷ 100

Sol^{n}. 2.7 ÷ 100 = $\frac{27}{10}$ ÷ 100

= $\frac{27}{10}$ x $\frac{1}{100}$

= $\frac{27}{1000}$

= 0.027

(ii) $0.3 \div 100$

Sol^{n}. $0.3 \div 100 = \frac{3}{10} \div 100$

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

$= \frac{3}{1000}$

$= 0.003$

(iii) $0.78 \div 100$

Sol^{n}. $0.78 \div 100 = \frac{78}{100} \div 100$

$= \frac{78}{100} \times \frac{1}{100}$

$= \frac{78}{10000}$

$= 0.0078$

(iv) $432.6 \div 100$

Sol^{n}. $432.6 \div 100 = \frac{4326}{10} \div 100$

$= \frac{4326}{10} \times \frac{1}{100}$

$= \frac{4326}{1000}$

$= 4.326$

(v) $23.6 \div 100$

Solution: $23.6 \div 100 = \frac{236}{10} \div 100$

$= \frac{236}{10} \times \frac{1}{100}$

$= \frac{236}{1000}$

$= 0.236$

(vi) 98.53 ÷ 100

Sol^{n}. 98.53÷ 100 = $\frac{9853}{100}$ ÷ 100

= $\frac{9853}{100}$ x $\frac{1}{100}$

= $\frac{9853}{10000}$

= 0.9853

Q4. Find

(i) 7.9 ÷ 1000

Sol^{n}. 7.9 ÷ 1000 = $\frac{79}{10}$ ÷ 1000

= $\frac{79}{10}$ x $\frac{1}{1000}$

= $\frac{79}{10000}$

= 0.0079

(ii) 26.3 ÷ 1000

Sol^{n}. 26.3 ÷ 1000 = $\frac{263}{10}$ ÷ 1000

= $\frac{263}{10}$ x $\frac{1}{1000}$

= $\frac{263}{1000}$

= 0.0263

(iii) 38.53 ÷ 1000

Sol^{n}. 38.53 ÷ 1000 = $\frac{3853}{100}$ ÷ 100

= $\frac{3853}{100}$ x $\frac{1}{1000}$

= $\frac{3853}{100000}$

= 0.03853

(iv) 128.9 ÷ 1000

Sol^{n}. 128.9 ÷ 1000 = $\frac{1289}{10}$ ÷ 1000

= $\frac{1289}{10}$ x $\frac{1}{1000}$

= $\frac{1289}{10000}$

= 0.1289

(v) 0.5 ÷ 1000

Sol^{n}. 0.5 ÷ 1000 = $\frac{5}{10}$ ÷ 1000

= $\frac{5}{10}$ x $\frac{1}{1000}$

= $\frac{5}{10000}$

= 0.0005

Q5. Find

(i) 7 ÷ 3.5

Sol^{n}. 7 ÷ 3.5 = 7 ÷ $\frac{35}{10}$

= 7 x $\frac{10}{35}$

= $\frac{7\times10}{35}$ = $\frac{\cancel{70}^{\,2}}{\cancel{35}_{\,1}}$

= 2

(ii) 36 ÷ 0.2

Sol^{n}. 36 ÷ 0.2 = 36 ÷ $\frac{2}{10}$

= $\cancel{36}^{18}$ x $\frac{10}{\cancel{2}_{\,1}}$

= 18 x 10

= 180

(iii) 3.25 ÷ 0.5

Sol^{n}. 3.25 ÷ 0.5 = $\frac{325}{100} \div \frac{5}{10}$

$= \frac{\cancel{325}^{65}}{100} \times \frac{\cancel{10}}{\cancel{5}_{1}}$

$= \frac{65}{10}$

= 6.5

(iv) 30.94 ÷ 0.7

Sol^{n}. 30.94 ÷ 0.7 = $\frac{3094}{100} \div \frac{7}{10}$

$= \frac{\cancel{3094}^{442}}{100} \times \frac{10}{\cancel{7}_{1}}$

$= \frac{442}{10}$

= 44.2

(v) 0.5 ÷ 0.25

Sol^{n}. 0.5÷ 0.25 = $\frac{5}{10} \div \frac{25}{100}$

$= \frac{\cancel{5}^{1}}{\cancel{10}} \times \frac{\cancel{100}}{\cancel{25}_{5}}$

$= \frac{\cancel{10}^{2}}{\cancel{5}_{1}}$

=2

(vi) 7.75 ÷ 0.25

Sol^{n}. 7.75 ÷ 0.25 = $\frac{775}{100} \div \frac{25}{100}$

$= \frac{\cancel{775}^{\cancel{155}^{31}}}{\cancel{100}} \times \frac{\cancel{100}}{\cancel{25}_{\cancel{5}_{1}}}$

= 31

(vii) 76.5 ÷ 0.15

Sol^{n}. $76.5 \div 0.15 = \frac{765}{10} \div \frac{15}{100}$

$= \frac{765}{10} \times \frac{100}{15}$

$= \frac{1530}{3} \times \frac{510}{1}$

$= 510$

(viii) 37.8 ÷ 1.4

Sol^{n}. $37.8 \div 1.4 = \frac{378}{10} \div \frac{14}{10}$

$= \frac{378}{10} \times \frac{10}{14}$

$= \frac{378}{14} = \frac{189}{7} = \frac{27}{1}$

$= 27$

(ix) 2.73 ÷ 1.3

Sol^{n}. $2.73 \div 1.3 = \frac{273}{100} \div \frac{13}{10}$

$= \frac{273}{100} \times \frac{10}{13}$

$= \frac{21}{10}$

$= 2.1$

Q6. A vehicle covers a distance of 43.2 km in 2.4 litres of petrol. How much distance will it cover in one litre of petrol.

Sol^{n}.

Distance covered in 2.4 litres of petrol = 43.2 km

2.4 L $\longrightarrow$ 43 .2 km

1 L $\longrightarrow$ $(\frac{43.2}{2.4})$ km

$= 43.2 \div 2.4$

$= \frac{432}{10} \div \frac{24}{10}$

$= \frac{432}{\cancel{10}} \times \frac{\cancel{10}}{24}$

$= \frac{432}{24}$

$= 18$

$\therefore$ Distance covered in one litre of petrol $= 18$ km.