Chapter – 2
Fractions and Decimals

Exercise 2.1

1. Solve:

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

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

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

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

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

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

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

Answer:

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

We have,

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

$= \frac{2\times5}{5} = \frac{3}{5}$

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

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

$= \frac{7}{5}$

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

We have,

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

$= \frac{4\times8}{8} + \frac{7}{8}$

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

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

$= \frac{39}{8}$

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

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

We have,

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

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

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

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

$= \frac{31}{35}$

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

We have,

$\frac{9}{11} - \frac{4}{15}$

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

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

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

$= \frac{91}{165}$

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

We have,

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

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

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

$= \frac{26}{10}$

$= \frac{13}{5}$

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

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

We have,

$$2\frac{2}{3}+3\frac{1}{2}$$
$$=\frac{8}{3}+\frac{7}{2}$$
$$=\frac{8\times2}{3\times2}+\frac{7\times3}{2\times3}$$
$$=\frac{16}{6}+\frac{21}{6}$$
$$=\frac{16+21}{6}$$
$$=\frac{37}{6}$$
$$=6\frac{1}{6}$$

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

We have,

$$8\frac{1}{2}-3\frac{5}{8}$$
$$=\frac{17}{2}-\frac{29}{8}$$
$$=\frac{17\times4}{2\times4}-\frac{29}{8}$$
$$=\frac{68}{8}-\frac{29}{8}$$
$$=\frac{(68-29)}{8}$$
$$=\frac{39}{8}$$
$$=4\frac{7}{8}$$

2. Arrange the following in descending order:

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

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

Answer:

(i) We have,

$\frac{2}{9},\frac{2}{3},\frac{8}{21}$

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First of all, we have to change them into like fractions: For doing that we will make the denominators of the fractions to be equal. This will be done by making them the L.C.M of (9, 3, 21) L.C.M of (9, 3, 21) = 63 Therefore,

$\frac{2}{9} = \frac{2\times7}{9\times7} = \frac{14}{63}$

Also,

$\frac{2}{3} = \frac{2\times21}{3\times21} = \frac{42}{63}$

And,

$\frac{8}{21} = \frac{8\times3}{3\times21} = \frac{24}{63}$

Since,

All have the same denominator and:

$42 > 24 > 14$

Therefore,

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

(ii) We have,

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

First of all, we have to change them into like fractions: This will be done by making the denominators equal. For this make the denominators equal to the L.C.M of (5, 7, 10) L.C.M (5, 7, 10) = 70 Therefore,

$\frac{1}{5} = \frac{1\times14}{5\times14} = \frac{14}{70}$

Also,

$\frac{3}{7} = \frac{3\times10}{7\times10} = \frac{30}{70}$

And,

$\frac{7}{10} = \frac{7\times7}{10\times7} = \frac{49}{70}$

Since,

All have the same denominator and:

$49 > 30 > 14$

Therefore,

$\frac{7}{10} > \frac{3}{7} > \frac{1}{5}$

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

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

Answer:

From the above question, we have:

Sum along the 1^{st} row $= \frac{4}{11} + \frac{9}{11} + \frac{2}{11} = \frac{15}{11}$

Sum along the 2^{nd} row $= \frac{3}{11} + \frac{5}{11} + \frac{7}{11} = \frac{15}{11}$

Sum along the 3^{rd} row $= \frac{8}{11} + \frac{1}{11} + \frac{6}{11} = \frac{15}{11}$

Sum along the 1^{st} column $= \frac{4}{11} + \frac{3}{11} + \frac{8}{11} = \frac{15}{11}$

Sum along the 2^{nd} column $= \frac{9}{11} + \frac{5}{11} + \frac{1}{11} = \frac{15}{11}$

Sum along the 3^{rd} column $= \frac{2}{11} + \frac{7}{11} + \frac{6}{11} = \frac{15}{11}$

Sum along the 1^{st} diagonal $= \frac{4}{11} + \frac{5}{11} + \frac{6}{11} = \frac{15}{11}$

Sum along the 2^{nd} diagonal $= \frac{2}{11} + \frac{5}{11} + \frac{8}{11} = \frac{15}{11}$

Therefore, the sum of all the rows, columns and diagonals of this square are equal

Hence,

It is a magic square.

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

Answer:

It is given in the question that,

Length of the rectangular sheet = $12\frac{1}{2}$ cm = $\frac{25}{2}$ cm

Also,

Breadth of rectangular sheet = $10\frac{2}{3}$ cm = $\frac{32}{3}$ cm

We know that,

Perimeter of rectangle = 2 × (Length + Breadth)

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

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

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

$= 2 \times \frac{139}{6}$

$= \frac{139}{3}$

$= 46\frac{1}{3}$ cm

5. Find the perimeters of:

(i) ΔABE

(ii) The rectangle BCDE in this figure.

Whose perimeter is greater?

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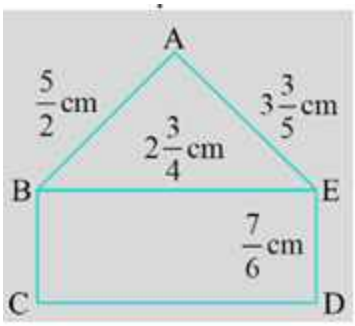

Answer:

(i) First of all we have to find out the perimeter of triangle ABE:

We know that,

Perimeter of triangle = Sum of all sides

Therefore,

Perimeter of triangle ABE = AB + BE + EA

$= \left(\frac{5}{2} + 2\frac{3}{4} + 3\frac{3}{5}\right)$

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

$= \left(\frac{5\times10}{2\times10} + \frac{11\times5}{4\times5} + \frac{18\times4}{5\times4}\right)$

$= \frac{50+55+72}{20}$

$= \frac{177}{20}$

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

(ii) Secondly, we have find out the perimeter of rectangle BCDE:

We know that,

Perimeter of rectangle = 2 × (Length + Breadth)

Therefore,

Perimeter of rectangle BCDE $= 2 \times \left(\frac{11}{4} + \frac{7}{6}\right)$

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$= 2 \times \left(\frac{11\times3}{4\times3} + \frac{7\times2}{6\times2}\right)$

$= 2 \times \frac{47}{12}$

$= \frac{47}{6}$

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

Now, we have to change the perimeter of both triangle and rectangle into like fractions:

Perimeter of triangle $= \frac{177}{20} = \frac{177\times3}{20\times3} = \frac{531}{60}$

Also,

Perimeter of rectangle $= \frac{47}{6} = \frac{47\times10}{6\times10} = \frac{470}{60}$

Since,

$531 > 470$

Therefore,

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

Hence,

Perimeter of triangle is greater than the perimeter of rectangle.

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

Answer:

It is given in the question that,

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

Also,

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Required width $= 7\frac{3}{10} = \frac{73}{10}$ cm

Therefore,

The picture should be trimmed by $= \left(\frac{38}{5} - \frac{73}{10}\right)$

$= \left(\frac{(38\times2)}{5\times2} - \frac{73}{10}\right)$

$= \frac{76-73}{10}$

$= \frac{3}{10}$ cm

7. Ritu ate 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?

Answer:

It is given in the question that,

Part of apple eaten by Ritu = 3/5

Also,

Part of apple eaten by Somu = 1 – Part of apple eaten by Ritu

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

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

$= \frac{2}{5}$

Therefore,

Somu ate $\frac{2}{5}$ part of the apple

Since,

$\frac{3}{5} > \frac{2}{5}$, therefore, Ritu ate the larger size of apple

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Now, the difference between the 2 shares $= \frac{3}{5} - \frac{2}{5}$

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

$= \frac{1}{5}$

Hence,

Share of Ritu is larger than the share of Somu by $\frac{1}{5}$.

8. Michael finished coloring a picture in 7/12 hour. Vaibhav finished colouring the same picture in 3/4 hour. Who worked longer? By what fraction was it longer?

Answer:

Time taken by Michael to colour a picture = $\frac{7}{12}$ hour

Also,

Time taken by Vaibhav to colour a picture = $\frac{3}{4}$ hour

First of all, we have to convert them into like fractions, we get:

$= \frac{3}{4} = \frac{3\times3}{4\times3} = \frac{9}{12}$

Since,

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

Therefore,

Vaibhav worked for longer period of time

Hence, the difference $= \frac{9}{12} - \frac{7}{12}$

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

$= \frac{2}{12}$

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$= \frac{1}{6}$

Therefore,

Vaibhav worked for a longer period of time by a fraction of $\frac{1}{6}$.

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Exercise 2.2

1. 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)

(b)

(c)

(d)

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Answer:

(i) In the first part,

$2 \times \frac{1}{5}$ clearly represents the addition of 2 figures out of which each part represents 1 shaded part out of the given 5 equal parts

Therefore,

$2 \times \frac{1}{5}$ is represented by option (d)

(ii) In the second part,

$2 \times \frac{1}{2}$ clearly represents the addition of 2 figures out of which each part represents 1 shaded part out of the given 2 equal parts

Therefore,

$2 \times \frac{1}{2}$ is represented by option (b)

(iii) In the third part,

$3 \times \frac{2}{3}$ clearly represents the addition of 3 figures out of which each part represents 2 shaded parts out of the given 3 equal parts

Therefore,

$3 \times \frac{2}{3}$ is represented by option (a)

(iv) In the fourth part,

$3 \times \frac{1}{4}$ clearly represents the addition of 3 figures out of which each part represents 1 shaded part out of the given 4 equal parts

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Therefore,

$3 \times \frac{1}{4}$ is represented by option (c).

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

(a)

(b)

(c)

Answer:

(i) In the first part,

$3 \times \frac{1}{5}$ clearly represents the addition of 3 figures out of which each part represents 1 shaded part out of the given 5 equal parts

Also,

$\frac{3}{5}$ represents 3 shaded parts out of 5 equal parts

Therefore,

$3 \times \frac{1}{5} = \frac{3}{5}$ is represented by option (c)

(ii) In the second part,

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$2 \times \frac{1}{3}$ clearly represents the addition of 2 figures out of which each part represents 1 shaded part out of the given 3 equal parts

Also,

$2 \times \frac{1}{3}$ represents 2 shaded parts out of 3 equal parts

Therefore,

$2 \times \frac{1}{3} = \frac{2}{3}$ is represented by option (a)

(iii) In the first part,

$3 \times \frac{3}{4}$ clearly represents the addition of 3 figures out of which each part represents 3 shaded parts out of the given 4 equal parts

Also,

$2\frac{1}{4}$ represents 2 fully shaded parts and 1 figure having 1 part as shaded out of 4 equal parts

Therefore,

$3 \times \frac{3}{4} = 2\frac{1}{4}$ is represented by option (b)

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

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

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

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

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

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

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

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

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

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

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

Answer:

(i) We have,

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

$= \frac{21}{2}$

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

(ii) We have,

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

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

(iii) We have,

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

$= \frac{12}{7}$

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

(iv) We have,

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

$= \frac{10}{9}$

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

(v) We have,

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

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$= \frac{8}{3}$

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

(vi) We have,

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

$= 15$

(vii) We have,

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

$= \frac{44}{7}$

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

(viii) We have,

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

$= 16$

(ix) We have

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

$= \frac{13}{3}$

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

(x) We have,

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

$= 3 \times 3$

$= 9$

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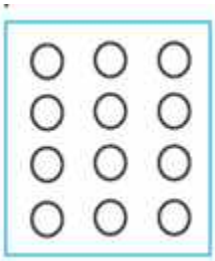
4. Shade:

(i) 1/2 of the circles in box (a)

(ii) 2/3 of the triangles in box (b)

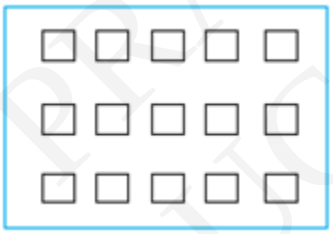
(iii) 3/5 of the squares in box (c).

(a)



(b)

(c)



Answer:

(a) Here,

As per the question,

We can observe that,

There are in all twelve circles in the box.

And,

We have to shade 1/2 of these circles.

Now,

Since,

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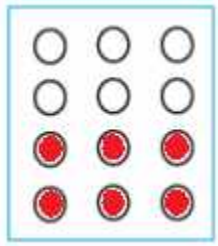
$12 \times \frac{1}{2} = 6$

Therefore,

We have to shade 6 circles.



(b) Here,

As per the question,

We can observe that,

There are in all nine triangles in the box.

And,

We have to shade 2/3 of these triangles.

Now,

Since,

$9 \times \frac{2}{3} = 6$

Therefore,

We have to shade 6 triangles

(c) Here,

As per the question,

We can observe that,

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There are in all fifteen squares in the box.

And,

We have to shade 3/5 of these squares.

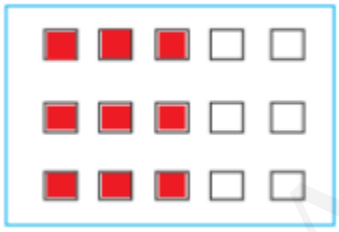
Now,

Since,

$15 \times \left(\frac{3}{5}\right) = 9$

Therefore,

We have to shade 9 squares



5. Find:

(a) 1/2 of (i) 24 (ii) 46

(b) 2/3 of (i) 18 (ii) 27

(c) 3/4 of (i) 16 (ii) 36

(d) 4/5 of (i) 20 (ii) 35

Answer:

(a) We have,

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

$= \frac{1}{2} \times 24$

$= 12$

Also

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

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$= \frac{1}{2} \times 46$

$= 23$

(b) We have,

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

$= \frac{2}{3} \times 18$

$= 2 \times 6$

$= 12$

Also,

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

$= \frac{2}{3} \times 27$

$= 2 \times 9$

$= 18$

(c) We have,

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

$= \frac{3}{4} \times 16$

$= 3 \times 4 = 12$

Also,

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

$= \frac{3}{4} \times 36$

$= 3 \times 9 = 27$

(d) We have,

(i) $\frac{4}{5}$ of 20

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

$= 4 \times 4$

$= 16$

Also,

(ii) $\frac{4}{5}$ of 35

$= \frac{4}{5} \times 35$

$= 4 \times 7$

$= 28$

6. Multiply and express as a mixed fraction?

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

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

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

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

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

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

Answer:

(a) We have,

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

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

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

$= \frac{78}{5}$

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

(b) We have,

$5 \times 6\frac{3}{4}$

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

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

$= \frac{135}{4}$

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

(c) We have,

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

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

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

$= \frac{63}{4}$

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

(d) We have,

$4 \times 6\frac{1}{3}$

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

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

$= \frac{76}{3}$

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

(e) We have,

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$3\frac{1}{4} \times 6$

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

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

$= \frac{78}{4}$

$= \frac{39}{2}$

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

(e) We have,

$3\frac{2}{5} \times 8$

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

$= \frac{(17 \times 8)}{5}$

$= \frac{136}{5}$

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

7. Find:

(a) 1/2 of (i) $2\frac{3}{4}$ (ii) $4\frac{2}{9}$

(b) 5/8 of (i) $3\frac{5}{6}$ (ii) $9\frac{2}{3}$

Answer:

(a) We have,

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

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

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

$= \frac{11}{8}$

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

Also,

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

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

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

$= \frac{19}{9}$

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

(b) We have,

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

$= \frac{5}{8} \times 3\ \frac{5}{6}$

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

$= \frac{115}{48}$

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

Also,

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

$= \frac{5}{8} \times 9\frac{2}{3}$

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

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$= \frac{145}{24}$

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

8. Vidya and Pratap went for a picnic. Their mother gave them a water bag that contained 5 liters of water. Vidya consumed 2/5 of the water. Pratap consumed the remaining water.
(i) How much water did Vidya drink?
(ii) What fraction of the total quantity of water did Pratap drink?

Answer:

(i) It is given in the question that,

Total amount of water = 5 litres

Also,

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

Therefore,

Amount of water that Vidya drink $= \frac{2}{5} \times 5$

= 2 litres

(ii) It is given in the question that,

The total amount of water = 5 litres

Also,

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

Therefore,

Amount of water consumed by Pratap = $1 - \frac{2}{5}$

= $\frac{3}{5}$ of the total water

= 3 litres

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Exercise 2.3

1. Find:
(i) 1/4 of (a) 1/4 (b) 3/5 (c) 4/5
(ii) 1/7 of (a) 2/9 (b) 6/5 (c) 3/10

Answer:

(i) We have,

(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) Also,

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

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

$= 5$

(ii) We have,

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

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

$= \frac{2}{63}$

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

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

$= \frac{6}{35}$

(c) Also,

$\frac{1}{7}$ of $\frac{3}{10}$

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

$= \frac{3}{70}$

2. Multiply and reduce to lowest form (if possible):

(i) $\frac{2}{3} \times 2\frac{2}{3}$ (ii) $\frac{2}{7} \times \frac{7}{9}$ (iii) $\frac{3}{8} \times \frac{6}{4}$

(iv) $\frac{9}{5} \times \frac{3}{5}$ (v) $\frac{1}{3} \times \frac{15}{8}$ (vi) $\frac{11}{2} \times \frac{3}{10}$

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

Answer:

(i) We have,

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

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

$= \frac{16}{9}$

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

(ii) We have,

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

$= \frac{2}{9}$

(iii) We have,

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

$= \frac{9}{16}$

(iv) We have,

$\frac{9}{5}$ or $\frac{3}{5}$

$= \frac{27}{25}$

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

(v) We have,

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

$= \frac{5}{8}$

(vi) We have,

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

$= \frac{33}{20}$

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

(vii) We have,

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

$= \frac{48}{35}$

$1\frac{13}{35}$

3. Multiply the following fractions:

(i) $\frac{2}{5} \times 5\frac{1}{4}$ (ii) $6 \times \frac{2}{5} \times \frac{7}{9}$ (iii) $\frac{3}{2} \times 5\frac{1}{3}$

(iv) $\frac{5}{6} \times 2\frac{3}{7}$ (v) $3\frac{2}{5} \times \frac{4}{7}$ (vi) $2\frac{3}{5} \times 3$

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

Answer:

(i) We have,

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

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

$= \frac{21}{10}$

We have an improper fraction and now it can be written in terms of the mixed fraction is as follows:

$\frac{21}{10} = 2\frac{1}{10}$

(ii) We have,

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

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

$= \frac{224}{45}$

We have an improper fraction and now it can be written in terms of mixed fraction is as follows:

$\frac{224}{45} = 4\frac{44}{45}$

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

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

$= 8$

In this question, we have a whole number

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

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

$= \frac{85}{42}$

We have an improper fraction and now it can be written in terms of mixed fraction is as follows:

$\frac{85}{42} = 2\frac{1}{42}$

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

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

$= \frac{68}{35}$

We have an improper fraction and now it can be written in terms of the mixed fraction is as follows:

$\frac{68}{35} = 1\frac{33}{35}$

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

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

$= \frac{39}{5}$

We have an improper fraction and now it can be written in terms of the mixed fraction is as follows:

$\frac{39}{5} = 7\frac{4}{5}$

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

$= \frac{25}{7} \times \frac{3}{5}$

$= \frac{15}{7}$

We have an improper fraction and now it can be written in terms of mixed fraction is as follows:

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$\frac{15}{7} = 2\frac{1}{7}$

4. Which is greater:
(i) 2/7 of 3/4 or 3/5 of 5/8
(ii) 1/2 of 6/7 or 2/3 of 3/7

Answer:

(i) We have,

$\frac{2}{7}$ of $\frac{3}{4}$

$= \frac{2}{7} \times \frac{3}{4}$

$= \frac{3}{14}$

Also,

$\frac{3}{5}$ of $\frac{5}{8}$

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

$= \frac{3}{8}$

Now converting the above fractions in to like fraction, we get:

$\frac{3}{14} = \frac{3\times40}{14\times4}$

$= \frac{12}{56}$

Also,

$\frac{3}{8} = \frac{3\times7}{8\times7}$

$= \frac{21}{56}$

Since,

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

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Therefore,

$\frac{3}{8} > \frac{3}{14}$

Hence,

$\frac{3}{5}$ is greater than $\frac{5}{8}$

(ii) We have,

$\frac{1}{2}$ of $\frac{6}{7}$

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

$= \frac{3}{7}$

Also,

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

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

$= \frac{2}{7}$

Since,

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

Hence,

$\frac{3}{7}$ is greater than $\frac{2}{7}$.

5. Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings is 3/4m. Find the distance between the first and the last sapling.

Answer:

It is given in the question that,

Length of 1 gap = $\frac{3}{4}$ m

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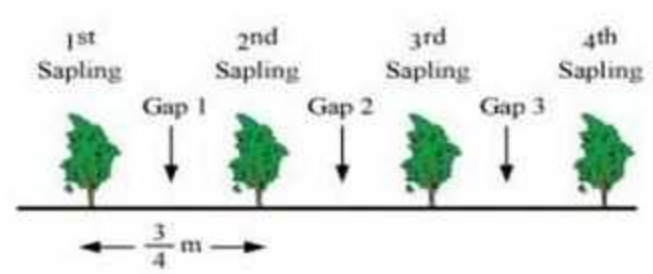

Also, from the figure it can be observed that:

Gaps between first and last saplings = 3

Therefore,

Distance between First and last sapling = $3 \times \frac{3}{4}$

$= \frac{9}{4}$

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

6. Lipika reads a book for hours every day. She reads the entire book in 6 days. How many hours in all were required by her to read the book?

Answer:

It is given in the question that,

Number of hours Lipika reads the book $= 1\frac{3}{4}$

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

Also,

Total days in which she completes the book = 6

Therefore,

Total number of hours required by her to complete the book = $\frac{7}{4} \times 6$

$= \frac{21}{2}$

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$= 10\frac{1}{2} = 10.5$ hours

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

Answer:

It is given in the question that,

Distance travelled by a car in 1 litre of petrol = 16 km

Also,

Total quantity of petrol = $2\frac{3}{4}$ litre

$= \frac{11}{4}$ litres

Therefore,

Distance travelled by the car in $\frac{11}{4}$ litres of petrol = $\frac{11}{4} \times 16$

= 44 km

Hence,

The car will cover a distance of 44 kms in $2\frac{3}{4}$ litres of petrol

8.

(A)

(i) Provide the number in the box $\square$,such that $\frac{2}{3} \times \square = \frac{10}{30}$

(ii) The simplest form of the number obtained in $\square$ Is _____.

Answer:

(i) We have,

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

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Hence,

The number in the box will be $\frac{5}{10}$

(ii) We have,

The simplest form of $\frac{5}{10}$:

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

(B) (i) Provide the number in the box $\square$, such that $\frac{3}{5} \times \square = \frac{24}{75}$

(ii) The simplest form of the number obtained in $\square$ is _____.

Answer:

(i) We have,

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

Hence,

The number in the box will be $\frac{8}{15}$

(ii) From above,

$\frac{8}{15}$ is itself in a simplest form and it cannot be further simplified

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Exercise 2.4

1. Find:

(i) $12 \div \frac{3}{4}$ (ii) $14 \div \frac{5}{6}$ (iii) $8 \div \frac{7}{3}$

(iv) $4 \div \frac{8}{3}$ (v) $3 \div 2\frac{1}{3}$ (vi) $5 \div 3\frac{4}{7}$

Answer:

(i) We have,

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

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

=16

(ii) We have,

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

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

$= \frac{84}{5}$

(iii) We have

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

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

$= \frac{24}{7}$

(iv) We have,

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

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

$= \frac{3}{2}$

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(v) We have,

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

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

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

$= \frac{9}{7}$

(vi) We have,

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

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

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

$= \frac{7}{5}$

2. Find the reciprocal of each of the following fractions. Classify the reciprocals as proper fractions, improper fractions and whole numbers.
(i) $\frac{3}{7}$ (ii) $\frac{5}{8}$ (iii) $\frac{9}{7}$ (iv) $\frac{6}{5}$ (v) $\frac{12}{7}$ (vi) $\frac{1}{8}$ (vii) $\frac{1}{11}$

Answer:

(i) We have,

$\frac{3}{7}$

We know that,

A proper fraction is that fraction in which denominator of the fraction is greater than the numerator of the fraction.

Also,

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Improper fraction is that in which numerator is greater than its denominator

And,

Whole numbers are collection of all positive integers including 0.

Now,

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

Hence,

It is a improper fraction

(ii) We have,

$\frac{5}{8}$

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

Hence,

It is a improper fraction

(iii) We have,

$\frac{9}{7}$

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

Hence,

It is a proper fraction

(iv) We have,

$\frac{6}{5}$

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

Hence,

It is a proper fraction

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(v) We have,

$\frac{12}{7}$

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

Hence,

It is a proper fraction

(vi) We have,

$\frac{1}{8}$

Reciprocal of $\frac{1}{8} = \frac{8}{1}$

Hence,

It is a whole number

(vii) We have,

$\frac{1}{11}$

Reciprocal of $\frac{1}{11} = \frac{11}{1}$

Hence,

It is a whole number

3. Find:

(i) $\frac{7}{3} \div 2$ (ii) $\frac{4}{9} \div 5$ (iii) $\frac{6}{13} \div 7$

(iv) $4\frac{1}{3} \div 3$ (v) $3\frac{1}{2} \div 4$ (vi) $4\frac{3}{7} \div 7$

Answer:

(i) We have,

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

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

$= \frac{7}{6}$

(ii) We have,

$\frac{4}{9} \div 5$

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

$= \frac{4}{45}$

(iii) We have,

$\frac{6}{13} \div 7$

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

$= \frac{6}{91}$

(iv) We have,

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

$= \frac{13}{3} \div 3$

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

$= \frac{13}{9}$

(v) We have,

$3\frac{1}{2} \div 4$

$= \frac{7}{2} \div 4$

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

$= \frac{7}{8}$

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(vi) We have,

$4\frac{3}{7} \div 7$

$= \frac{31}{7} \div 7$

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

$= \frac{31}{49}$

4. Find:

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

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

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

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

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

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

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

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

Answer:

(i) We have

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

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

$= \frac{4}{5}$

(ii) We have,

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

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

$= \frac{2}{3}$

(iii) We have,

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

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

$= \frac{3}{8}$

(iv) We have,

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

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

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

$= \frac{35}{9}$

(v) We have,

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

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

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

$= \frac{21}{16}$

(vi) We have,

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

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

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

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$= \frac{4}{15}$

(vii) We have,

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

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

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

$= \frac{48}{25}$

(viii) We have,

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

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

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

$= \frac{11}{6}$

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Exercise 2.5

1. Which is greater?

(i) 0.5 or 0.05

(ii) 0.7 or 0.5

(iii) 7 or 0.7

(iv) 1.37 or 1.49

(v) 2.03 or 2.30

(vi) 0.8 or 0.88

Answer:

(i) We have,

0.5 or 0.05

Firstly, we have to convert these decimals into equivalent fractions:

So,

$0.5 = \frac{5}{10}$

$= \frac{5\times10}{10\times10}$

$= \frac{50}{100}$

And,

$0.05 = \frac{5}{100}$

Now, from the above fractions it can be observed that both have same denominator

Since,

$50 > 5$

Therefore,

$0.5 > 0.05$

(ii) We have,

0.7 or 0.5

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Firstly, we have to convert these decimals into equivalent fractions:

So,

$0.7 = \frac{7}{10}$

And,

$0.5 = \frac{5}{10}$

Now, from the above fractions it can be observed that both have same denominator

Since,

$7 > 5$

Therefore,

$0.7 > 0.5$

(iii) We have,

7 or 0.7

Firstly, we have to convert these decimals into equivalent fractions:

So,

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

$= \frac{7\times10}{1\times10}$

$= \frac{70}{10}$

And,

$0.7 = \frac{7}{10}$

Now, from the above fractions it can be observed that both have same denominator

Since,

$70 > 7$

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Therefore,

$7 > 0.7$

(iv) We have,

1.37 or 1.49

Firstly, we have to convert these decimals into equivalent fractions:

So,

$1.37 = \frac{137}{100}$

And,

$1.49 = \frac{149}{100}$

Now, from the above fractions it can be observed that both have same denominator

Since,

$137 < 149$

Therefore,

$1.37 < 1.49$

(v) We have,

2.03 or 2.30

Firstly, we have to convert these decimals into equivalent fractions:

So,

$2.03 = \frac{203}{100}$

And,

$2.30 = \frac{230}{100}$

Now, from the above fractions it can be observed that both have same denominator

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Since,

$203 < 230$

Therefore,

$2.03 < 2.30$

(vi) We have,

0.8 or 0.88

Firstly, we have to convert these decimals into equivalent fractions:

So,

$0.8 = \frac{8}{10}$

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

$= \frac{80}{100}$

And,

$0.88 = \frac{88}{100}$

Now, from the above fractions it can be observed that both have same denominator

Since,

$80 < 88$

Therefore,

$0.8 < 0.88$

2. Express are rupees using decimals:

(i) 7 paise

(ii) 7 rupees 7 paise

(iii) 77 rupees 77 paise

(iv) 50 paise

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(v) 235 paise

Answer:

(i) We have,

7 paise

We know that,

There are 100 paise in 1 rupee

So, for converting paise into rupees we have to divide paise by 100

Therefore,

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

= Rs 0.07

(ii) We have,

7 Rs 7 paise

We know that,

There are 100 paise in 1 rupee

So, for converting paise into rupees we have to divide paise by 100

Therefore,

7 Rs 7 paise = Rs 7 + Rs $\frac{7}{100}$

= Rs 7.07

(iii) We have,

77 Rs 77 paise

We know that,

There are 100 paise in 1 rupee

So, for converting paise into rupees we have to divide paise by 100

Therefore,

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77 Rs 77 paise = Rs 77 + Rs $\frac{7}{100}$

= Rs 77.77

(iv) We have,

We have,

50 paise

We know that,

There are 100 paise in 1 rupee

So, for converting paise into rupees we have to divide paise by 100

Therefore,

50 paise = Rs $\frac{50}{100}$

= Rs 0.50

(v) We have,

235 paise

We know that,

There are 100 paise in 1 rupee

So, for converting paise into rupees we have to divide paise by 100

Therefore,

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

= Rs 2.35

3.

(A) Express 5 cm in meter and kilometre

Answer:

We have,

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5 cm

We know that,

1 m = 100 cm

Also,

1 km = 100000 cm

Therefore,

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

= 0.05 m

Also,

5 cm = $\frac{5}{1000}$ km

= 0.00005 km

(B) Express 35 mm in cm, m and k

Answer:

We have,

35 mm

We know that,

1 cm = 10 mm

1 m = 1000 mm

Also,

1 km = 1000000 mm

Therefore,

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

= 3.5 cm

Also,

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

= 0.035 m

And,

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

= 0.000035 km

4. Express in kg:
(i) 200 g (ii) 3470 kg (iii) 4 kg 8 g

Answer:

(i) We have,

200 g

We know that,

1 kg = 1000 g

Therefore,

200 g = $\frac{200}{1000}$ kg

= 0.2 kg

(ii) We have,

3470 g

We know that,

1 kg = 1000 g

Therefore,

3470 g = $\frac{3470}{1000}$ kg

= 3.470 kg

(iii) We have,

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4 kg 8 g

We know that,

1 kg = 1000 g

Therefore,

$4 \text{ kg} + 8 \text{ g} = 4 \text{ kg} + \frac{8}{1000} \text{ kg}$

$= 4.008 \text{ kg}$

5. Write the following decimal numbers in the expanded form:
(i) 20.03 (ii) 2.03 (iii) 200.03 (iv) 2.034

Answer:

(i) We have,

20.03

We have to expand the above given decimal number:

$20.03 = 2 \times 10 + 0 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

(ii) We have,

2.03

We have to expand the above given decimal number:

$2.03 = 2 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

(iii) We have,

200.03

We have to expand the above given decimal number:

$200.03 = 2 \times 100 + 0 \times 10 + 0 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

(iv) We have,

2.034

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We have to expand the above given decimal number:

$2.304 = 2 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100} + 4 \times \frac{1}{1000}$

6. Write the place value of 2 in the following decimal numbers:
(i) 2.56 (ii) 21.37 (iii) 10.25 (iv) 9.42 (v) 63.352

Answer:

(i) We have,

2.56

We have to write the place value of 2 in the given decimal number

Therefore,

Place value of 2 in 2.56 = Ones

(ii) We have,

21.37

We have to write the place value of 2 in the given decimal number

Therefore,

Place value of 2 in 21.37 = Tens

(iii) We have,

10.25

We have to write the place value of 2 in the given decimal number

Therefore,

Place value of 2 in 10.25 = Tenths

(iv) We have,

9.42

We have to write the place value of 2 in the given decimal number

Therefore,

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Place value of 2 in 9.42 = Hundredths

(v) We have,

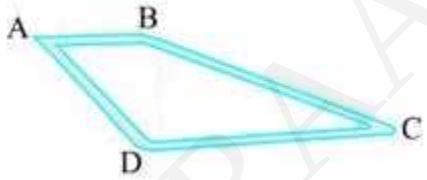
63.352

We have to write the place value of 2 in the given decimal number

Therefore,

Place value of 2 in 63.352 = Thousandths

7. 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 place 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?



Answer:

It is given in the question that,
Distance travelled by Dinesh = AB + BC
= (7.5 + 12.7) km
7.5
_____+ 12.7
20.2
Therefore,
Distance travelled by Dinesh = 20.2 km
Also,
Distance travelled by Ayub = AD + DC
= (9.3 + 11.8) km
9.3
_____+ 11.8
21.1
Therefore,

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Distance travelled by Ayub = 21.1 km
Hence,
It is clear that Ayub has travelled more distance
Now,
Difference = (21.1 – 20.2) km
21.1
_____20.2
0.9
Therefore,
Difference of their distance = 0.9

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

Answer:

It is given in the question that,

Total fruits bought by Shyama = 5 kg300 g + 3 kg 250 g

= 8 kg 550 g

= $(8 + \frac{550}{1000})$ kg

= 8.550 kg

Also,

Total fruits bought by Sarala = 4 kg 800 g + 4 kg 150 g

= 8 kg 950 g

= $(8 + \frac{950}{1000})$ kg

= 8.950 kg

Therefore,

Sarala bought more fruits as compared to Shyama

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9. How much less is 28 km than 42.6 km?

Answer:

For the above question, we have

$$\begin{array}{r} {}^{3}{}^{12}\not{4}\not{2}.6 \\ -\ 2\ 8.0 \\ \hline 1\ 4.6 \end{array}$$

Therefore,

From the above results, it is clear that 28 km is **14.6 km less** than 42.6 km.

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Exercise 2.6

1. Find:

(i) 0.2×6

(ii) 8×4.6

(iii) 2.71×5

(iv) 20.1×4

(v) 0.05×7

(vi) 211.02×4

(vii) 2×0.86

Answer:

(i) We have,

0.2×6

Therefore,

$0.2 \times 6 = \frac{2}{10} \times 6$

$= \frac{12}{10}$

$= 1.2$

(ii) We have,

8×4.6

Therefore,

$8 \times 4.6 = 8 \times \frac{46}{10}$

$= \frac{368}{10}$

$= 36.8$

(iii) We have,

2.71×5

Therefore,

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$2.71 \times 5 = \frac{271}{100} \times 5$

$= \frac{1355}{100}$

$= 13.55$

(iv) We have,

20.1×4

Therefore,

$20.1 \times 4 = \frac{201}{10} \times 4$

$= \frac{804}{10}$

$= 80.4$

(v) We have,

0.05×7

Therefore,

$0.05 \times 7 = \frac{5}{100} \times 7$

$= \frac{35}{100}$

(vi) We have,

211.02×4

Therefore,

$211.02 \times 4 = \frac{21102}{100} \times 4$

$= \frac{84408}{100}$

$= 844.08$

(vii) We have,

2×0.86

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Therefore,

$2.086 = 2 \times \frac{86}{100}$

$= \frac{172}{100}$

$= 1.72$

2. Find the area of a rectangle whose length is 5.7 cm and breadth is 3 cm

Answer:

It is given in the question that,

Length of rectangle = 5.7 cm

Also,

Breadth of rectangle = 3 cm

We know that,

Area of rectangle = Length × Breadth

Therefore,

Area = Length × Breadth

= 5.7 × 3

= 17.1 cm^2

3. Find:

(i) 1.3 × 10 (ii) 36.8 × 10
(iii) 153.7 × 10 (iv) 168.07 × 10
(v) 31.1 × 100 (vi) 156.1 × 100
(vii)3.62 × 100 (viii) 43.07 × 100
(ix) 0.5 × 10 (x) 0.08 × 10
(xi) 0.9 × 100 (xii) 0.03 × 1000

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Answer:

(i) We have

1.3×10

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side.

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 1.3 and 10 can be calculated as follows:

$1.3 \times 10 = 13$

(ii) We have,

36.8×10

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 36.8 and 10 can be calculated as follows:

$36.8 \times 10 = 368$

(iii) We have

153.7×10

We know that,

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Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 153.7 and 10 can be calculated as follows:

$153.7 \times 10 = 1537$

(iv) We have

168.07×10

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 168.07 and 10 can be calculated as follows:

$168.07 \times 10 = 1680.7$

(v) We have

31.1×100

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

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Therefore,

The product of 31.1 and 100 can be calculated as follows:

$31.1 \times 100 = 3110$

(vi) We have

156.1×100

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 156.1 and 100 can be calculated as follows:

$156.1 \times 100 = 15600$

(vii) We have

3.62×100

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 3.62 and 100 can be calculated as follows:

$3.62 \times 100 = 362$

(viii) We have

43.07×100

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We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 43.07 and 100 can be calculated as follows:

$43.07 \times 100 = 4307$

(ix) We have

0.5×10

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 0.5 and 10 can be calculated as follows:

$0.5 \times 10 = 5$

(x) We have

0.08×10

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

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There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 0.08 and 10 can be calculated as follows:

$0.08 \times 10 = 0.8$

(xi) We have,

0.9×100

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 0.9 and 100 can be calculated as follows:

$0.9 \times 100 = 90$

(xii) We have

0.03×1000

We know that,

Whenever any decimal number is multiplied by 10, 100 or 1000 then the decimal number which is at the product is shifted towards the right side

There would be a shift according to the number of zeroes. Like if a number is multiplied by 10, the decimal will shift to 1 place right.

Therefore,

The product of 0.03 and 1000 can be calculated as follows:

$0.03 \times 1000 = 30$

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

Answer:

It is given in the question that,

Distance covered by two wheeler in 1 litre of petrol = 55.3 km

Therefore,

Distance covered by two wheeler in 10 litres of petrol = 55.3 × 10

= 553 km

Hence,

Two - wheeler will cover a distance of 553 km in 10 litres of petrol

5. Find:

(i) 2.5 × 0.3 (ii) 0.1 × 51.7

(iii) 0.2 × 316.8 (iv) 1.3 × 3.1

(v) 0.5 × 0.05 (vi) 11.2 × 0.15

(vii) 1.07 × 0.02 (viii) 10.05 × 1.05

(ix) 101.01 × 0.01 (x) 100.01 × 1.1

Answer:

(i) We have

2.5×0.3

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

$= \frac{75}{100}$

$= 0.75$

(ii) We have,

0.1×51.7

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

$= \frac{517}{100}$

$= 5.17$

(iii) We have,

0.2×316.8

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

$= \frac{6336}{100}$

$= 63.36$

(iv) We have,

1.3×3.1

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

$= \frac{403}{100}$

$= 4.03$

(v) We have,

0.5×0.05

$= 0.5 \times 0.05$

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

$= \frac{25}{1000}$

$= 0.025$

(vi) We have,

11.2×0.15

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

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$= \frac{1680}{1000}$

$= 1.680$

$= 1.68$

(vii) We have,

1.07×0.02

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

$= \frac{214}{10000}$

$= 0.0214$

(viii) We have,

10.05×1.05

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

$= \frac{105525}{10000}$

$= 10.5525$

(ix) We have,

101.01×0.01

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

$= \frac{10101}{10000}$

$=1.0101$

(x) We have,

100.01×1.1

$= \frac{1001}{100} \times \frac{11}{10}$

$= \frac{110011}{1000}$

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= 110.011

Exercise 2.7

1. Find:

(i) 0.4 ÷ 2 (ii) 0.35 ÷ 5

(iii) 2.48 ÷ 4 (iv) 65.4 ÷ 4

(v) 651.2 ÷ 4 (vi) 14.49 ÷ 7

(vii) 3.96 ÷ 4 (viii) 0.80 ÷ 5

Answer:

(i) We have,

$0.4 \div 2$

$= \frac{4}{10} \div 2$

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

$= \frac{2}{10}$

= 0.2

(ii) We have,

$0.35 \div 5$

$= \frac{35}{100} \div 5$

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

$= \frac{7}{100}$

= 0.07

(iii) We have,

$2.48 \div 4$

$= \frac{248}{100} \div 4$

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

$= \frac{62}{100}$

$= 0.62$

(iv) We have,

$65.4 \div 6$

$= \frac{654}{10} \div 6$

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

$= \frac{109}{10}$

$= 10.9$

(v) We have,

$651.2 \div 4$

$= \frac{6512}{10} \div 4$

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

$= \frac{1628}{10}$

$= 162.8$

(vi) We have,

$14.49 \div 7$

$= \frac{14.49}{100} \div 7$

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

$= \frac{207}{100}$

$= 2.07$

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(vii) We have,

$3.96 \div 4$

$= \frac{396}{100} \div 4$

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

$= \frac{99}{100}$

$= 0.99$

(viii) We have,

$0.80 \div 5$

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

$= \frac{80}{100} \times \frac{1}{5}$

$= \frac{16}{100}$

$= 0.16$

2. Find:

(i) $4.8 \div 10$ (ii) $52.5 \div 10$

(iii) $0.7 \div 10$ (iv) $33.1 \div 10$

(v) $272.23 \div 10$ (vi) $0.56 \div 10$

(vii) $3.97 \div 10$

Answer:

(i) We have,

$4.8 \div 10$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

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Therefore,

$4.8 \div 10$

$= \frac{4.8}{10}$

$= 0.48$

(ii) We have,

$52.5 \div 10$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$52.5 \div 10$

$= 5.25$

(iii) We have,

$0.7 \div 10$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$0.7 \div 10$

$= \frac{0.7}{10}$

$= 0.07$

(iv) We have,

$33.1 \div 10$

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We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$33.1 \div 10$

$= \frac{33.1}{10}$

$= 3.31$

(v) We have,

$272.23 \div 10$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$272.23 \div 10$

$= \frac{272.23}{10}$

$= 27.223$

(vi) We have,

$0.56 \div 10$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as zeros in the number

Therefore,

$0.56 \div 10$

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$= \frac{0.56}{10}$

$= 0.056$

(vii) We have,

$3.97 \div 10$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$3.97 \div 10$

$= \frac{3.97}{10}$

$= 0.397$

3. Find:

(i) $2.7 \div 100$ (ii) $0.3 \div 100$

(iii) $0.78 \div 100$ (iv) $432.6 \div 100$

(v) $23.6 \div 100$ (vi) $98.53 \div 100$

Answer:

(i) We have,

$2.7 \div 100$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$2.7 \div 100$

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$= \frac{2.7}{100}$

$= 0.027$

(ii) We have,

$0.3 \div 100$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$0.3 \div 100$

$= \frac{0.3}{100}$

$= 0.003$

(iii) We have,

$0.78 \div 100$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$0.78 \div 100$

$= \frac{0.78}{100}$

$= 0.0078$

(iv) We have,

$432.6 \div 100$

We know that,

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Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$432.6 \div 100$

$= \frac{432.6}{100}$

$= 4.326$

(v) We have,

$23.6 \div 100$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$23.6 \div 100$

$= \frac{23.6}{100}$

$= 0.236$

(vi) We have,

$98.53 \div 100$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$98.53 \div 100$

$= \frac{98.53}{100}$

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= 0.9853

4. Find:

(i) 7.9 ÷ 1000 (ii) 26.3 ÷ 1000

(iii) 38.53 ÷ 1000 (iv) 128.9 ÷ 1000

(v) 0.5 ÷ 1000

Answer:

(i) We have,

$7.9 \div 1000$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$7.9 \div 1000$

$= \frac{7.9}{1000}$

= 0.0079

(ii) We have,

$26.3 \div 1000$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$26.3 \div 1000$

$= \frac{26.3}{1000}$

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= 0.0263

(iii) We have,

$38.53 \div 1000$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$38.53 \div 1000$

$= \frac{38.53}{1000}$

= 0.03853

(iv) We have,

$128.9 \div 1000$

We know that,

Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$128.9 \div 1000$

$= \frac{128.9}{1000}$

= 0.1289

(v) We have,

$0.5 \div 1000$

We know that,

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Whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number

Therefore,

$0.5 \div 1000$

$= \frac{0.5}{1000}$

$= 0.0005$

5. Find:

(i) $7 \div 35$ (ii) $36 \div 0.2$

(iii) $3.25 \div 0.5$ (iv) $30.94 \div 0.7$

(v) $0.5 \div 0.25$ (vi) $7.75 \div 0.25$

(vii) $76.5 \div 0.15$ (viii) $37.8 \div 1.4$

(ix) $2.73 \div 1.3$

Answer:

(i) We have,

$7 \div 35$

$= 7 \div \frac{35}{100}$

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

$= \frac{70}{35}$

$= 2$

(ii) We have,

$36 \div 0.2$

$= 36 \div \frac{2}{10}$

$= 36 \times \frac{10}{2}$

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$= 18 \times 10$

$= 180$

(iii) We have,

$3.25 \div 0.5$

$= \frac{325}{100} \div \frac{5}{10}$

$= \frac{325}{100} \div \frac{5}{10}$

$= \frac{325}{100} \times \frac{10}{5}$

$= \frac{65}{10}$

$= 6.5$

(iv) We have,

$30.94 \div 0.7$

$= \frac{3094}{100} \div \frac{7}{10}$

$= \frac{3094}{100} \times \frac{10}{7}$

$= \frac{442}{10}$

$= 44.2$

(v) We have,

$0.5 \div 0.25$

$= \frac{5}{10} \div \frac{25}{100}$

$= \frac{5}{10} \div \frac{25}{100}$

$= \frac{5}{10} \times \frac{100}{25}$

$= \frac{10}{5}$

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$= 2$

(vi) We have,

$7.75 \div 0.25$

$= \frac{775}{100} \div \frac{25}{100}$

$= \frac{775}{100} \times \frac{100}{25}$

$= \frac{775}{25}$

$= 31$

(vii) We have,

$76.5 \div 0.15$

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

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

$= \frac{7650}{15}$

$= 510$

(viii) We have,

$37.8 \div 1.4$

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

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

$= 27$

(ix) We have,

$2.73 \div 1.3$

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

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

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$= \frac{21}{10}$

$= 2.1$

6. 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?

Answer:

It is given in the question that,

Distance covered by a vehicle in 2, 4 litres of petrol = 43.2 km

Therefore,

Distance travelled by a vehicle in 1 litre of petrol $= 43.2 \div 2.4$

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

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

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

$= \frac{432}{24}$

$= 18$

Hence,

The vehicle will cover a distance of 18 km in 1 litre of petrol.

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