

EXERCISE 4A

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1. Convert the following into fractions in their lowest terms:**(i) 3.75****(ii) 0.5****(iii) 2.04****(iv) 0.65****(v) 2.405****(vi) 0.085****(vii) 8.025****Solution:****(i) 3.75**

We can write it as

$$= 375/100$$

Here the HCF of 375 and 100 is 25

$$= (375 \div 25)/(100 \div 25)$$

So we get

$$= 15/4$$

(ii) 0.5

We can write it as

$$= 5/10$$

$$= 1/2$$

(iii) 2.04

We can write it as

$$= 204/100$$

Here the HCF of 204 and 100 is 4

$$= (204 \div 4)/(100 \div 4)$$

So we get

$$= 51/25$$

(iv) 0.65

We can write it as

$$= 65/100$$

Here the HCF of 65 and 100 is 5

$$= (65 \div 5)/(100 \div 5)$$

So we get

$$= 13/20$$

(v) 2.405

We can write it as

$$= 2405/1000$$

Here the HCF of 2405 and 1000 is 5

$$= (2405 \div 5)/(1000 \div 5)$$

So we get

$$= 481/200$$

(vi) 0.085

We can write it as

$$= 85/1000$$

Here the HCF of 85 and 1000 is 5

$$= (85 \div 5) / (1000 \div 5)$$

So we get

$$= 17/200$$

(vii) 8.025

We can write it as

$$= 8025/1000$$

Here the HCF of 8025 and 1000 is 25

$$= (8025 \div 25) / (1000 \div 25)$$

So we get

$$= 321/40$$

2. Convert into decimal fractions:

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

(ii) $\frac{79}{100}$

(iii) $\frac{37}{10,000}$

(iv) $\frac{7543}{10^4}$

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

(vi) $9 \frac{3}{5}$

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

(viii) $5 \frac{7}{8}$

Solution:

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

We can write it as

$$= \frac{14}{5} \times \frac{2}{2}$$

So we get

$$= \frac{28}{10}$$

$$= 2.8$$

(ii) $\frac{79}{100}$

We can write it as

$$= \frac{79}{100}$$

$$= 0.79$$

(iii) $\frac{37}{10,000}$

We can write it as

$$= \frac{37}{10,000}$$

$$= 0.0037$$

(iv) $\frac{7543}{10^4}$

We can write it as

$$= \frac{7543}{10000}$$

$$= 0.7543$$

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

$$\begin{array}{r} 0.75 \\ 4 \overline{) 3} \\ \underline{28} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

By division we get
= 0.75

(vi) $9 \frac{3}{5}$
We can write it as
= $\frac{48}{5}$
By division

$$\begin{array}{r} 9.6 \\ 5 \overline{) 48} \\ \underline{45} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

So we get
= 9.6

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

$$\begin{array}{r} 0.625 \\ 8 \overline{) 5} \\ \underline{48} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

By division we get
= 8.625

(viii) $5 \frac{7}{8}$

$$\begin{array}{r} 0.875 \\ 8 \overline{) 7} \\ \underline{64} \\ 60 \\ \underline{56} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

By division we get
= 5.875

3. Write the number of decimal places in:

- (i) 0.4762
- (ii) 7.00349
- (iii) 8235.403
- (iv) 35.4
- (v) 2.608
- (vi) 0.000879

Solution:

(i) 0.4762

There are four decimal places.

(ii) 7.00349

There are five decimal places.

(iii) 8235.403

There are three decimal places.

(iv) 35.4

There is one decimal place.

(v) 2.608

There are three decimal places.

(vi) 0.000879

There are six decimal places.

4. Write the following decimals as word statements:

- (i) 0.4, 0.9, 0.1
- (ii) 1.9, 4.4, 7.5
- (iii) 0.02, 0.56, 13.06
- (iv) 0.005, 0.207, 111.519
- (v) 0.8, 0.08, 0.008, 0.0008
- (vi) 256.1, 10.22, 0.634

Solution:

(i) $0.4 =$ zero-point-four
 $0.9 =$ zero-point-nine
 $0.1 =$ zero-point-one

(ii) $1.9 =$ one-point-nine
 $4.4 =$ four-point-four
 $7.5 =$ seven-point-five

(iii) $0.02 =$ zero-point-zero-two
 $0.56 =$ zero-point-five-six
 $13.06 =$ thirteen-point-zero-six

(iv) $0.005 =$ zero-point-zero-zero-five
 $0.207 =$ zero-point-two-zero-seven
 $111.519 =$ one hundred eleven-point-five-one-nine

(v) $0.8 =$ zero-point-eight
 $0.08 =$ zero-point-zero-eight
 $0.008 =$ zero-point-zero-zero-eight
 $0.0008 =$ zero-point-zero-zero-zero-eight

(vi) $256.1 =$ two hundred fifty six-point-one
 $10.22 =$ ten-point-two-two
 $0.634 =$ zero-point-six-three-four

5. Convert the given fractions into like fractions:

(i) 0.5, 3.62, 43.981 and 232.0037

(ii) 215.78, 33.0006, 530.3 and 0.03569

Solution:

(i) 0.5, 3.62, 43.981 and 232.0037

The greatest decimal places is 4

So we get

$$0.5 = 0.5000$$

$$3.62 = 3.6200$$

$$43.981 = 43.9810$$

$$232.0037 = 232.0037$$

(ii) 215.78, 33.0006, 530.3 and 0.03569

The greatest decimal places is 5

$$215.78 = 215.78000$$

$$33.0006 = 33.00060$$

$$530.3 = 530.30000$$

$$0.03569 = 0.03569$$

EXERCISE 4B

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1. Add:

(i) 0.5 and 0.37

(ii) 3.8 and 8.7

(iii) 0.02, 0.008 and 0.309

(iv) 0.4136, 0.3195 and 0.52

(v) 9.25, 3.4 and 6.666

(vi) 3.007, 0.587 and 18.341

(vii) 0.2, 0.02 and 2.0002

(viii) 6.08, 60.8, 0.608 and 0.0608

(ix) 29.03, 0.0003, 0.3 and 7.2

(x) 3.4, 2.025, 9.36 and 3.6221

Solution:

(i) 0.5 and 0.37

$$\begin{array}{r} 0.5 \\ + 0.37 \\ \hline 0.87 \end{array}$$

So we get

$$0.5 + 0.37 = 0.87$$

(ii) 3.8 and 8.7

$$\begin{array}{r} 3.8 \\ + 8.7 \\ \hline 12.5 \end{array}$$

So we get

$$3.8 + 8.7 = 12.5$$

(iii) 0.02, 0.008 and 0.309

$$\begin{array}{r} 0.02 \\ 0.008 \\ + 0.309 \\ \hline 0.337 \end{array}$$

So we get

$$0.02 + 0.008 + 0.309 = 0.337$$

(iv) 0.4136, 0.3195 and 0.52

$$\begin{array}{r} 0.4136 \\ 0.3195 \\ + 0.52 \\ \hline 1.2531 \end{array}$$

So we get
 $0.4136 + 0.3195 + 0.52 = 1.2531$

(v) 9.25, 3.4 and 6.666

$$\begin{array}{r} 9.25 \\ 3.4 \\ + 6.666 \\ \hline 19.316 \end{array}$$

So we get
 $9.25 + 3.4 + 6.666 = 19.316$

(vi) 3.007, 0.587 and 18.341

$$\begin{array}{r} 3.007 \\ 0.587 \\ + 18.341 \\ \hline 21.935 \end{array}$$

So we get
 $3.007 + 0.587 + 18.341 = 21.935$

(vii) 0.2, 0.02 and 2.0002

$$\begin{array}{r} 0.2 \\ 0.02 \\ + 2.0002 \\ \hline 2.2202 \end{array}$$

So we get
 $0.2 + 0.02 + 2.0002 = 2.2202$

(viii) 6.08, 60.8, 0.608 and 0.0608

$$\begin{array}{r} 6.08 \\ 60.8 \\ 0.608 \\ + 0.0608 \\ \hline 67.5488 \end{array}$$

So we get

$$6.08 + 60.8 + 0.608 + 0.0608 = 67.5488$$

(ix) 29.03, 0.0003, 0.3 and 7.2

$$\begin{array}{r} 29.03 \\ 0.0003 \\ 0.3 \\ + 7.2 \\ \hline 36.5303 \end{array}$$

So we get

$$29.03 + 0.0003 + 0.3 + 7.2 = 36.5303$$

(x) 3.4, 2.025, 9.36 and 3.6221

$$\begin{array}{r} 3.4 \\ 2.025 \\ 9.36 \\ + 3.6221 \\ \hline 18.4071 \end{array}$$

So we get

$$3.4 + 2.025 + 9.36 + 3.6221 = 18.4071$$

2. Subtract the first number from the second:

(i) 5.4, 9.8

(ii) 0.16, 4.3

(iii) 0.82, 8.6

(v) 2.237, 9.425

(vi) 41 .03, 59.46

(vii) 3.92, 26.86

(viii) 4.73, 8.5

(ix) 12.63, 36.2

(x) 0.845, 3.71

Solution:

(i) 5.4, 9.8

It can be written as

$$9.8 - 5.4 = 4.4$$

$$\begin{array}{r} 9.8 \\ - 5.4 \\ \hline 4.4 \end{array}$$

(ii) 0.16, 4.3

It can be written as

$$4.3 - 0.16 = 4.14$$

$$\begin{array}{r} 4.3 \\ -0.16 \\ \hline 4.14 \end{array}$$

(iii) 0.82, 8.6

It can be written as

$$8.6 - 0.82 = 7.78$$

$$\begin{array}{r} 8.6 \\ -0.82 \\ \hline 7.78 \end{array}$$

(v) 2.237, 9.425

It can be written as

$$9.425 - 2.237 = 7.188$$

$$\begin{array}{r} 9.425 \\ -2.237 \\ \hline 7.188 \end{array}$$

(vi) 41.03, 59.46

It can be written as

$$59.46 - 41.03 = 18.43$$

$$\begin{array}{r} 59.46 \\ -41.03 \\ \hline 18.43 \end{array}$$

(vii) 3.92, 26.86

It can be written as

$$26.86 - 3.92 = 22.94$$

$$\begin{array}{r} 26.86 \\ - 3.92 \\ \hline 22.94 \end{array}$$

(viii) 4.73, 8.5

It can be written as

$$8.5 - 4.73 = 3.77$$

$$\begin{array}{r} 8.5 \\ -4.73 \\ \hline 3.77 \end{array}$$

(ix) 12.63, 36.2

It can be written as

$$36.2 - 12.63 = 23.57$$

$$\begin{array}{r} 36.2 \\ -12.63 \\ \hline 23.57 \end{array}$$

(x) 0.845, 3.71

It can be written as

$$3.71 - 0.845 = 2.865$$

$$\begin{array}{r} 3.71 \\ - 0.845 \\ \hline 2.865 \end{array}$$

3. Simplify:

(i) $28.796 - 13.42 - 2.555$

(ii) $93.354 - 62.82 - 13.045$

(iii) $36 - 18.59 - 3.2$

(iv) $86 + 16.95 - 3.0042$

(v) $32.8 - 13 - 10.725 + 3.517$

(vi) $4000 - 30.51 - 753.101 - 69.43$

(vii) $0.1835 + 163.2005 - 25.9 - 100$

(viii) $38.00 - 30 + 200.200 - 0.230$

(ix) $555.555 + 55.555 - 5.55 - 0.555$

Solution:

(i) $28.796 - 13.42 - 2.555$

It can be written as

$$= 28.796 - (13.42 + 2.555)$$

On further calculation

$$= 28.796 - 15.975$$

$$= 12.821$$

$$\begin{array}{r} 28.796 \\ -15.975 \\ \hline 12.821 \end{array} \qquad \begin{array}{r} 13.42 \\ +2.555 \\ \hline 15.975 \end{array}$$

(ii) $93.354 - 62.82 - 13.045$

It can be written as

$$= 93.354 - (62.82 + 13.045)$$

On further calculation

$$= 93.354 - 75.865$$

$$= 17.489$$

$$\begin{array}{r} 93.354 \\ -75.865 \\ \hline 17.489 \end{array} \qquad \begin{array}{r} 62.82 \\ +13.045 \\ \hline 75.865 \end{array}$$

(iii) $36 - 18.59 - 3.2$

It can be written as

$$= 36 - (18.59 + 3.2)$$

On further calculation

$$= 36 - 21.79$$

$$= 14.21$$

$$\begin{array}{r} 36 \\ -21.79 \\ \hline 14.21 \end{array} \qquad \begin{array}{r} 18.59 \\ + 3.2 \\ \hline 21.79 \end{array}$$

(iv) $86 + 16.95 - 3.0042$

It can be written as

$$= 102.95 - 3.0042$$

On further calculation

$$= 99.9458$$

$$\begin{array}{r} 102.95 \\ -3.0042 \\ \hline 99.9458 \end{array} \qquad \begin{array}{r} 86 \\ + 16.95 \\ \hline 102.95 \end{array}$$

(v) $32.8 - 13 - 10.725 + 3.517$

It can be written as

$$= (32.8 + 3.517) - (13 + 10.725)$$

On further calculation

$$= 36.317 - 23.725$$

$$= 12.592$$

$$\begin{array}{r} 13 \\ +10.725 \\ \hline 23.725 \end{array} \qquad \begin{array}{r} 32.8 \\ + 3.517 \\ \hline 36.317 \end{array} \qquad \begin{array}{r} 36.317 \\ -23.725 \\ \hline 12.592 \end{array}$$

(vi) $4000 - 30.51 - 753.101 - 69.43$

It can be written as

$$= 4000 - (30.51 + 753.101 + 69.43)$$

On further calculation

$$= 4000 - 853.041$$

$$= 3146.959$$

$$\begin{array}{r} 30.51 \\ +753.101 \\ + 69.43 \\ \hline 853.041 \end{array} \qquad \begin{array}{r} 4000 \\ -853.041 \\ \hline 3146.959 \end{array}$$

(vii) $0.1835 + 163.2005 - 25.9 - 100$

It can be written as

$$= (0.1835 + 163.2005) - (25.9 + 100)$$

On further calculation

$$= 163.2840 - 125.9$$

$$= 37.484$$

$$\begin{array}{r} 25.9 \\ + 100 \\ \hline 125.9 \end{array} \qquad \begin{array}{r} 0.1835 \\ +163.2005 \\ \hline 163.384 \end{array} \qquad \begin{array}{r} 163.384 \\ - 125.9 \\ \hline 37.484 \end{array}$$

(viii) $38.00 - 30 + 200.200 - 0.230$

It can be written as

$$= (38.00 + 200.200) - (30 + 0.230)$$

On further calculation

$$= 238.200 - 30.230$$

$$= 207.970$$

$$= 207.97$$

$$\begin{array}{r} 238.2 \\ - 30.23 \\ \hline 207.97 \end{array}$$

(ix) $555.555 + 55.555 - 5.55 - 0.555$

It can be written as

$$= (555.555 + 55.555) - (5.55 + 0.555)$$

On further calculation

$$= 611.110 - 6.105$$

$$= 605.005$$

$$\begin{array}{r} 555.555 \\ + 55.555 \\ \hline 611.11 \\ \hline \end{array} \qquad \begin{array}{r} 611.11 \\ - 6.105 \\ \hline 605.005 \end{array}$$

4. Find the difference between 6.85 and 0.685.

Solution:

The difference between 6.85 and 0.685 = $6.85 - 0.685$
= 6.165

$$\begin{array}{r} 6.85 \\ - 0.685 \\ \hline 6.165 \end{array}$$

5. Take out the sum of 19.38 and 56.025, then subtract it from 200.111.

Solution:

We know that the sum of 19.38 and 56.025 can be written as

$$19.38 + 56.025 = 75.405$$

$$\begin{array}{r} 19.38 \\ + 56.025 \\ \hline 75.405 \end{array}$$

We can write it as

Difference between 200.111 and 75.405

$$200.111 - 75.405 = 124.706$$

$$\begin{array}{r} 200.111 \\ - 75.405 \\ \hline 124.706 \end{array}$$

6. Add 13.95 and 1.003, and from the result, subtract the sum of 2.794 and 6.2.

Solution:

We know that addition of 13.95 and 1.003 can be written as

$$13.95 + 1.003 = 14.953$$

$$\begin{array}{r} 13.95 \\ + 1.003 \\ \hline 14.953 \end{array}$$

Similarly the sum of 2.794 and 6.2 can be written as

$$2.794 + 6.2 = 8.994$$

$$\begin{array}{r} 2.794 \\ + 6.2 \\ \hline 8.994 \end{array}$$

Here the difference between 14.953 and 8.994

$$14.953 - 8.994 = 5.959$$

$$\begin{array}{r} 14.953 \\ - 8.994 \\ \hline 5.959 \end{array}$$

7. What should be added to 39.587 to give 80.375?

Solution:

It is given that

$$\text{Sum of two numbers} = 80.375$$

$$\text{One number} = 39.587$$

$$\text{So the other number} = 80.375 - 39.587 = 40.788$$

$$\begin{array}{r} 80.375 \\ - 39.587 \\ \hline 40.788 \end{array}$$

8. What should be subtracted from 100 to give 19.29?

Solution:

It is given that

$$\text{Sum of two numbers} = 100$$

$$\text{One number} = 19.29$$

$$\text{So the other number} = 100 - 19.29 = 80.71$$

$$\begin{array}{r} 100 \\ - 19.29 \\ \hline 80.71 \end{array}$$

9. What is the excess of 584.29 over 213.95?

Solution:

It is given that

Sum of two numbers = 584.29

One number = 213.95

So the other number = $584.29 - 213.95 = 370.34$

$$\begin{array}{r} 584.29 \\ -213.95 \\ \hline 370.34 \end{array}$$

10. Evaluate:

(i) $(5.4 - 0.8) + (2.97 - 1.462)$

(ii) $(6.25 + 0.36) - (17.2 - 8.97)$

(iii) $9.004 + (3 - 2.462)$

(iv) $879.4 - (87.94 - 8.794)$

Solution:

(i) $(5.4 - 0.8) + (2.97 - 1.462)$

It can be written as

$= 4.6 + 1.508$

On further calculation

$= 6.108$

$\begin{array}{r} 5.4 \\ - 0.8 \\ \hline 4.6 \end{array}$	$\begin{array}{r} 2.97 \\ - 1.462 \\ \hline 1.508 \end{array}$	$\begin{array}{r} 4.6 \\ + 1.508 \\ \hline 6.108 \end{array}$
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(ii) $(6.25 + 0.36) - (17.2 - 8.97)$

It can be written as

$= 6.61 - 8.23$

On further calculation

$= -1.62$

$\begin{array}{r} 6.25 \\ + 0.36 \\ \hline 6.61 \end{array}$	$\begin{array}{r} 17.2 \\ - 8.97 \\ \hline 8.23 \end{array}$	$\begin{array}{r} 6.61 \\ - 8.23 \\ \hline -1.62 \end{array}$
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(iii) $9.004 + (3 - 2.462)$

It can be written as

$= 9.004 + 0.538$

On further calculation

$= 9.542$

$\begin{array}{r} 3 \\ - 2.462 \\ \hline 0.538 \end{array}$	$\begin{array}{r} 9.004 \\ + 0.538 \\ \hline 9.542 \end{array}$
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(iv) $879.4 - (87.94 - 8.794)$

It can be written as

$= 879.4 - 79.146$

On further calculation

$= 800.254$

$$\begin{array}{r} 87.94 \\ - 8.794 \\ \hline 79.146 \end{array}$$

$$\begin{array}{r} 879.4 \\ - 79.146 \\ \hline 800.254 \end{array}$$

11. What is the excess of 75 over 48.29?

Solution:

We know that the excess of 75 over 48.29 can be written as

$$\begin{array}{r} 75 \\ - 48.29 \\ \hline 26.71 \end{array}$$

Hence, the excess of 75 over 48.29 is 26.71.

12. If $A = 237.98$ and $B = 83.47$.

Find:

(i) $A - B$

(ii) $B - A$.

Solution:

(i) $A - B$

It is given that $A = 237.98$ and $B = 83.47$

Substituting the values

$$A - B = 237.98 - 83.47$$

$$A - B = 154.51$$

$$\begin{array}{r} 237.98 \\ - 83.47 \\ \hline 154.51 \end{array}$$

(ii) $B - A$

It is given that $A = 237.98$ and $B = 83.47$

Substituting the values

$$B - A = 83.47 - 237.98$$

$$B - A = -154.51$$

$$\begin{array}{r} 83.47 \\ - 237.98 \\ \hline -154.51 \end{array}$$

13. The cost of one kg of sugar increases from ₹28.47 to ₹32.65. Find the increase in cost.

Solution:

Cost of sugar = ₹28.47

Cost of sugar is raised = ₹32.65

Increase in the cost of sugar = ₹32.65 - ₹28.47 = ₹4.18

$$\begin{array}{r} 32.65 \\ - 28.47 \\ \hline 4.18 \end{array}$$

EXERCISE 4C

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1. Multiply:

(i) 0.87 by 10

(ii) 2.948 by 100

(iii) 6.4 by 1000

(iv) 5.8 by 4

(v) 16.32 by 28

(vi) 5.037 by 8

(vii) 4.6 by 2.1

(viii) 0.568 by 6.4

Solution:

(i) 0.87 by 10

It can be written as

$$0.87 \times 10 = 8.7$$

(ii) 2.948 by 100

It can be written as

$$2.948 \times 100 = 294.8$$

(iii) 6.4 by 1000

It can be written as

$$6.4 \times 1000 = 6400$$

(iv) 5.8 by 4

It can be written as

$$5.8 \times 4 = 23.2$$

$$\begin{array}{r} 5.8 \\ \times 4 \\ \hline \end{array}$$
$$\begin{array}{r} \times 4 \\ \hline 23.2 \end{array}$$

(v) 16.32 by 28

It can be written as

$$16.32 \times 28 = 456.96$$

$$\begin{array}{r} 16.32 \\ \times 28 \\ \hline \end{array}$$
$$\begin{array}{r} \times 28 \\ \hline 130.56 \\ \hline \end{array}$$
$$\begin{array}{r} 130.56 \\ \hline 326.4 \\ \hline \end{array}$$
$$\begin{array}{r} 326.4 \\ \hline 456.96 \end{array}$$

(vi) 5.037 by 8

It can be written as

$$5.037 \times 8 = 40.296$$

$$\begin{array}{r} 5.037 \\ \times 8 \\ \hline \end{array}$$
$$\begin{array}{r} \times 8 \\ \hline 40.296 \end{array}$$

(vi) 4.6 by 2.1

It can be written as

$$4.6 \times 2.1 = 9.66$$

$$\begin{array}{r} 4.6 \\ \times 2.1 \\ \hline 46 \\ \times 92 \\ \hline 9.66 \end{array}$$

(viii) 0.568 by 6.4

It can be written as

$$0.568 \times 6.4 = 3.6352$$

$$\begin{array}{r} 0.568 \\ \times 6.4 \\ \hline 2272 \\ \times 34080 \\ \hline 3.6352 \end{array}$$

2. Multiply each number by 10, 100, 1000:

(i) 0.5

(ii) 0.112

(iii) 4.8

(iv) 0.0359

(v) 16.27

(vi) 234.8

Solution:

(i) 0.5

It can be written as

$$0.5 \times 10 = 5$$

$$0.5 \times 100 = 50$$

$$0.5 \times 1000 = 500$$

(ii) 0.112

It can be written as

$$0.112 \times 10 = 1.12$$

$$0.112 \times 100 = 11.2$$

$$0.112 \times 1000 = 112$$

(iii) 4.8

It can be written as

$$4.8 \times 10 = 48$$

$$4.8 \times 100 = 480$$

$$4.8 \times 1000 = 4800$$

(iv) 0.0359

It can be written as
 $0.0359 \times 10 = 0.359$
 $0.0359 \times 100 = 3.59$
 $0.0359 \times 1000 = 35.9$

(v) 16.27
It can be written as
 $16.27 \times 10 = 162.7$
 $16.27 \times 100 = 1627$
 $16.27 \times 1000 = 16270$

(vi) 234.8
It can be written as
 $234.8 \times 10 = 2348$
 $234.8 \times 100 = 23480$
 $234.8 \times 1000 = 234800$

3. Evaluate:

- (i) 5.897×2.3
- (ii) 0.894×87
- (iii) 0.01×0.001
- (iv) $0.84 \times 2.2 \times 4$
- (v) $4.75 \times 0.08 \times 3$
- (vi) $2.4 \times 3.5 \times 4.8$
- (vii) $0.8 \times 1.2 \times 0.25$
- (viii) $0.3 \times 0.03 \times 0.003$

Solution:

(i) 5.897×2.3
We know that
 $5.897 \times 2.3 = 13.5631$

5.897
<u>x 2.3</u>
17691
<u>x 11794</u>
13.5631

(ii) 0.894×87
We know that
 $0.894 \times 87 = 77.778$

0.894
<u>x 87</u>
6258
<u>x 7152</u>
77.778

(iii) 0.01×0.001
We know that
 $0.01 \times 0.001 = 0.00001$

(iv) $0.84 \times 2.2 \times 4$

It can be written as

$= 0.84 \times 8.8$

$= 7.392$

$$\begin{array}{r} 84 \\ \times 88 \\ \hline 672 \\ \times 672 \\ \hline 7392 \end{array}$$

(v) $4.75 \times 0.08 \times 3$

It can be written as

$= 4.75 \times 0.24$

$= 1.1400$

$= 1.14$

$$\begin{array}{r} 4.75 \\ \times 0.24 \\ \hline 1900 \\ \times 950 \\ \hline 1.14 \end{array}$$

(vi) $2.4 \times 3.5 \times 4.8$

It can be written as

$= 8.40 \times 4.8$

$= 8.4 \times 4.8$

We get

$= 40.32$

$$\begin{array}{r} 24 \\ \times 35 \\ \hline 120 \\ \times 72 \\ \hline 840 \end{array} \quad \begin{array}{r} 8.4 \\ \times 48 \\ \hline 672 \\ \times 336 \\ \hline 4032 \end{array}$$

(vii) $0.8 \times 1.2 \times 0.25$

It can be written as

$= 0.96 \times 0.25$

$= 0.2400$

$= 0.24$

$$\begin{array}{r} 96 \\ \times 25 \\ \hline 480 \\ \times 192 \\ \hline 2400 \end{array}$$

(viii) $0.3 \times 0.03 \times 0.003$

It can be written as

$= 0.009 \times 0.003$

$$= 0.000027$$

4. Divide:

(i) 54.9 by 10

(ii) 7.8 by 100

(iii) 324.76 by 1000

(iv) 12.8 by 4

(v) 27.918 by 9

(vi) 4.672 by 8

(vii) 4.32 by 1.2

(viii) 7.644 by 1.4

(ix) 4.8432 by 0.08

Solution:

(i) 54.9 by 10

It can be written as

$$54.9 \div 10 = 5.49$$

(ii) 7.8 by 100

It can be written as

$$7.8 \div 100 = 0.078$$

(iii) 324.76 by 1000

It can be written as

$$324.76 \div 1000 = 0.32476$$

(iv) 12.8 by 4

It can be written as

$$12.8 \div 4 = 3.2$$

(v) 27.918 by 9

It can be written as

$$27.918 \div 9 = 3.102$$

(vi) 4.672 by 8

It can be written as

$$4.672 \div 8 = 0.584$$

$$\begin{array}{r} 0.584 \\ 8 \overline{) 4.672} \\ \underline{- 40} \\ 67 \\ \underline{- 64} \\ 32 \\ \underline{- 32} \\ 0 \end{array}$$

(vii) 4.32 by 1.2

It can be written as

$$4.32 \div 1.2$$

Multiplying by 100

$$432 \div 120 = 3.6$$

$$\begin{array}{r} 3.6 \\ 120 \overline{) 432} \\ \underline{- 360} \\ 720 \\ \underline{- 720} \\ 0 \end{array}$$

(viii) 7.644 by 1.4

It can be written as

$$7.644 \div 1.4$$

Multiplying by 1000

$$7644 \div 1400 = 5.46$$

$$\begin{array}{r} 5.46 \\ 1400 \overline{) 7644} \\ \underline{- 7000} \\ 6440 \\ \underline{- 5600} \\ 8400 \\ \underline{- 8400} \\ 0 \end{array}$$

(ix) 4.8432 by 0.08

It can be written as

$$4.8432 \div 0.08$$

So we get

$$48432 \div 800 = 60.54$$

$$\begin{array}{r} 60.54 \\ 800 \overline{) 48432} \\ \underline{- 4800} \\ 4320 \\ \underline{- 4000} \\ 3200 \\ \underline{- 3200} \\ 0 \end{array}$$

5. Divide each of the given numbers by 10, 100, 1000 and 10000

(i) 2.1

(ii) 8.64

(iii) 5.01

(iv) 0.0906

(v) 0.125

(vi) 111.11

Solution:

(i) 2.1

It can be written as

$$2.1 \div 10 = 0.21$$

$$2.1 \div 100 = 0.021$$

$$2.1 \div 1000 = 0.0021$$

$$2.1 \div 10000 = 0.00021$$

(ii) 8.64

It can be written as

$$8.64 \div 10 = 0.864$$

$$8.64 \div 100 = 0.0864$$

$$8.64 \div 1000 = 0.00864$$

$$8.64 \div 10000 = 0.000864$$

(iii) 5.01

It can be written as

$$5.01 \div 10 = 0.501$$

$$5.01 \div 100 = 0.0501$$

$$5.01 \div 1000 = 0.00501$$

$$5.01 \div 10000 = 0.000501$$

(iv) 0.0906

It can be written as

$$0.0906 \div 10 = 0.00906$$

$$0.0906 \div 100 = 0.000906$$

$$0.0906 \div 1000 = 0.0000906$$

$$0.0906 \div 10000 = 0.00000906$$

(v) 0.125

It can be written as

$$0.125 \div 10 = 0.0125$$

$$0.125 \div 100 = 0.00125$$

$$0.125 \div 1000 = 0.000125$$

$$0.125 \div 10000 = 0.0000125$$

(vi) 111.11

It can be written as

$$111.11 \div 10 = 11.111$$

$$111.11 \div 100 = 1.1111$$

$$111.11 \div 1000 = 0.11111$$

$$111.11 \div 10000 = 0.011111$$

6. Evaluate :

(i) $9.75 \div 5$

(ii) $4.4064 \div 4$

(iii) $27.69 \div 30$

- (iv) $19.25 \div 25$
 (v) $20.64 \div 16$
 (vi) $3.204 \div 9$
 (vii) $0.125 \div 25$
 (viii) $0.14616 \div 72$
 (ix) $0.6227 \div 1300$
 (x) $257.894 \div 0.169$
 (xi) $6.3 \div (0.3)^2$

Solution:

(i) $9.75 \div 5$

We get

$$9.75 \div 5 = 1.95$$

$$\begin{array}{r} 1.95 \\ 5 \overline{) 9.75} \\ \underline{- 5} \\ 47 \\ \underline{- 45} \\ 25 \\ \underline{- 25} \\ 0 \end{array}$$

(ii) $4.4064 \div 4$

We get

$$4.4064 \div 4 = 1.016$$

(iii) $27.69 \div 30$

We get

$$27.69 \div 30 = 0.923$$

$$\begin{array}{r} 0.923 \\ 30 \overline{) 27.69} \\ \underline{- 270} \\ 69 \\ \underline{- 60} \\ 90 \\ \underline{- 90} \\ 0 \end{array}$$

(iv) $19.25 \div 25$

We get

$$19.25 \div 25 = 0.77$$

$$\begin{array}{r} 0.77 \\ 25 \overline{) 19.25} \\ \underline{- 175} \\ 175 \\ \underline{- 175} \\ 0 \end{array}$$

(v) $20.64 \div 16$

We get

$$20.64 \div 16 = 1.29$$

$$\begin{array}{r} 1.29 \\ 16 \overline{) 20.64} \\ \underline{- 16} \\ 46 \\ \underline{- 32} \\ 144 \\ \underline{- 144} \\ 0 \end{array}$$

(vi) $3.204 \div 9$

We get

$$3.204 \div 9 = 0.356$$

$$\begin{array}{r} 0.356 \\ 9 \overline{) 3.204} \\ \underline{- 27} \\ 50 \\ \underline{- 45} \\ 54 \\ \underline{- 54} \\ 0 \end{array}$$

(vii) $0.125 \div 25$

We get

$$0.125 \div 25 = 0.005$$

$$\begin{array}{r} 0.005 \\ 25 \overline{) 0.125} \\ \underline{- 125} \\ 0 \end{array}$$

(viii) $0.14616 \div 72$

We get

$$0.14616 \div 72 = 0.00203$$

$$\begin{array}{r} 0.00203 \\ 72 \overline{) 0.14616} \\ \underline{- 144} \\ 216 \\ \underline{- 216} \\ 0 \end{array}$$

(ix) $0.6227 \div 1300$

We get

$$0.6227 \div 1300 = 0.000479$$

$$\begin{array}{r}
 0.000479 \\
 1300 \overline{) 0.6227} \\
 \underline{- 5200} \\
 10270 \\
 \underline{- 9100} \\
 11700 \\
 \underline{- 11700} \\
 0
 \end{array}$$

(x) $257.894 \div 0.169$
 Multiplying by 1000
 $257894 \div 169 = 1526$

$$\begin{array}{r}
 1526 \\
 169 \overline{) 257894} \\
 \underline{- 169} \\
 888 \\
 \underline{- 845} \\
 439 \\
 \underline{- 338} \\
 1014 \\
 \underline{- 1014} \\
 0
 \end{array}$$

(xi) $6.3 \div (0.3)^2$
 We can write it as
 $= 6.3 \div (0.3 \times 0.3)$
 By further calculation
 $= 6.3 \div 0.09$
 Multiply both sides by 100
 $= 630 \div 9 = 70$

7. Evaluate:

- (i) $4.3 \times 0.52 \times 0.3$
- (ii) $3.2 \times 2.5 \times 0.7$
- (iii) $0.8 \times 1.5 \times 0.6$
- (iv) $0.3 \times 0.3 \times 0.3$
- (v) $1.2 \times 1.2 \times 0.4$
- (vi) $0.4 \times 0.04 \times 0.004$
- (vii) $0.5 \times 0.6 \times 0.7$
- (viii) $0.5 \times 0.06 \times 0.007$

Solution:

(i) $4.3 \times 0.52 \times 0.3$
 We know that

$$\begin{array}{r}
 0.52 \\
 \times 4.3 \\
 \hline
 156 \\
 \times 208 \\
 \hline
 2.236 \\
 \times 0.3 \\
 \hline
 6708 \\
 \times 0 \\
 \hline
 0.6708
 \end{array}$$

Here the sum of decimal places = $1 + 2 + 1 = 4$
 So we get
 $4.3 \times 0.52 \times 0.3 = 0.6708$

(ii) $3.2 \times 2.5 \times 0.7$

We know that

$$\begin{array}{r}
 3.2 \\
 \times 2.5 \\
 \hline
 160 \\
 \times 64 \\
 \hline
 8 \\
 \times 0.7 \\
 \hline
 5600 \\
 \times 0 \\
 \hline
 5.6
 \end{array}$$

Here the sum of decimal places = $1 + 1 + 1 = 3$
 So we get
 $3.2 \times 2.5 \times 0.7 = 5.600$ or 5.6

(iii) $0.8 \times 1.5 \times 0.6$

We know that

$$\begin{array}{r}
 1.5 \\
 \times 0.8 \\
 \hline
 120 \\
 \times 0 \\
 \hline
 1.2 \\
 \times 0.6 \\
 \hline
 720 \\
 \times 0 \\
 \hline
 0.72
 \end{array}$$

Here the sum of decimal places = $1 + 1 + 1 = 3$
 So we get
 $0.8 \times 1.5 \times 0.6 = 0.720$ or 0.72

(iv) $0.3 \times 0.3 \times 0.3$

We know that

$$\begin{array}{r} 0.3 \\ \times 0.3 \\ \hline 9 \\ \times 0 \\ \hline 0.09 \\ \times 0.3 \\ \hline 0.027 \end{array}$$

Here the sum of decimal places = $1 + 1 + 1 = 3$

So we get

$$0.3 \times 0.3 \times 0.3 = 0.027$$

(v) $1.2 \times 1.2 \times 0.4$

We know that

$$\begin{array}{r} 1.2 \\ \times 1.2 \\ \hline 0.24 \\ \times 12 \\ \hline 1.44 \\ \times 0.4 \\ \hline 576 \\ \times 0 \\ \hline 0.576 \end{array}$$

Here the sum of decimal places = $1 + 1 + 1 = 3$

So we get

$$1.2 \times 1.2 \times 0.4 = 0.576$$

(vi) $0.4 \times 0.04 \times 0.004$

We know that

$$\begin{array}{r} 0.004 \\ \times 0.04 \\ \hline 16 \\ 0000 \times \\ 0000 \times \times \\ \hline 0.00016 \\ \times 0.4 \\ \hline 0.000064 \end{array}$$

Here the sum of decimal places = $1 + 2 + 3 = 6$

So we get

$$0.4 \times 0.04 \times 0.004 = 0.000064$$

(vii) $0.5 \times 0.6 \times 0.7$

We know that

$$\begin{array}{r}
 0.5 \\
 \times 0.6 \\
 \hline
 0.3 \\
 00x \\
 \hline
 0.3 \\
 \times 0.7 \\
 \hline
 210 \\
 000x \\
 \hline
 0.21
 \end{array}$$

Here the sum of decimal places = $1 + 1 + 1 = 3$

So we get

$$0.5 \times 0.6 \times 0.7 = 0.210 \text{ or } 0.21$$

(viii) $0.5 \times 0.06 \times 0.007$

We know that

$$\begin{array}{r}
 0.007 \\
 \times 0.06 \\
 \hline
 0.00042 \\
 \times 0.5 \\
 \hline
 0.00021
 \end{array}$$

Here the sum of decimal places = $1 + 2 + 3 = 5$

So we get

$$0.5 \times 0.06 \times 0.007 = 0.00021$$

8. Evaluate:

(i) $(0.9)^2$

(ii) $(0.6)^2 \times 0.5$

(iii) $0.3 \times (0.5)^2$

(iv) $(0.4)^3$

(v) $(0.2)^3 \times 5$

(vi) $(0.2)^3 \times 0.05$

Solution:

(i) $(0.9)^2$

It can be written as

$$0.9 \times 0.9 = 0.81$$

Here the sum of decimal places is $1 + 1 = 2$

(ii) $(0.6)^2 \times 0.5$

It can be written as

$$= 0.6 \times 0.6 \times 0.5$$

On further calculation

$$= 0.36 \times 0.5$$

$$= 0.180 \text{ or } 0.18$$

Here the sum of decimal places is $1 + 1 + 1 = 3$

(iii) $0.3 \times (0.5)^2$

It can be written as

$$= 0.3 \times 0.5 \times 0.5$$

On further calculation

$$= 0.3 \times 0.25$$

$$= 0.075$$

Here the sum of decimal places is $1 + 1 + 1 = 3$

(iv) $(0.4)^3$

It can be written as

$$= 0.4 \times 0.4 \times 0.4$$

On further calculation

$$= 0.16 \times 0.4$$

$$= 0.064$$

Here the sum of decimal places is $1 + 1 + 1 = 3$

(v) $(0.2)^3 \times 5$

It can be written as

$$= 0.2 \times 0.2 \times 0.2 \times 5$$

On further calculation

$$= 0.008 \times 5$$

$$= 0.40 \text{ or } 0.4$$

Here the sum of decimal places is $1 + 1 + 1 = 3$

(vi) $(0.2)^3 \times 0.05$

It can be written as

$$= 0.2 \times 0.2 \times 0.2 \times 0.05$$

On further calculation

$$= 0.008 \times 0.05$$

$$= 0.00040$$

Here the sum of decimal places is $1 + 1 + 1 + 1 + 1 = 5$

9. Find the cost of 36.75 kg wheat at the rate of ₹12.80 per kg.

Solution:

It is given that

Weight of wheat = 36.75 kg

Cost of wheat per kg = ₹12.80

So the cost of 36.75 kg wheat = $36.75 \times 12.80 = ₹470.40$

$$\begin{array}{r} 36.75 \\ \times 12.80 \\ \hline 470.4 \end{array}$$

10. The cost of a pen is ₹56.15. Find the cost of 16 such pens.

Solution:

It is given that

Cost of a pen = ₹56.15

So the cost of 16 such pens = $16 \times 56.15 = ₹898.40$

$$\begin{array}{r} 56.15 \\ \times 16 \\ \hline 898.4 \end{array}$$

11. Evaluate:

(i) $0.0072 \div 0.06$

(ii) $0.621 \div 0.3$

(iii) $0.0532 \div 0.005$

(iv) $0.01162 \div 0.14$

(v) $(7.5 \times 40.4) \div 25$

(vi) $2.1 \div (0.1 \times 0.1)$

Solution:

(i) $0.0072 \div 0.06$

Multiplying both numerator and denominator by 100

$$= (0.0072 \times 100) / (0.06 \times 100)$$

On further calculation

$$= 0.72/6$$

$$= 0.12$$

(ii) $0.621 \div 0.3$

Multiplying both numerator and denominator by 10

$$= (0.621 \times 10) / (0.3 \times 10)$$

On further calculation

$$= 6.21/3$$

$$= 2.07$$

(iii) $0.0532 \div 0.005$

Multiplying both numerator and denominator by 1000

$$= (0.0532 \times 1000) / (0.005 \times 1000)$$

On further calculation

$$= 53.2/5$$

$$= 10.64$$

(iv) $0.01162 \div 0.14$

Multiplying both numerator and denominator by 100

$$= (0.01162 \times 100) / (0.14 \times 100)$$

On further calculation

$$= 1.162/14$$

$$= 0.083$$

(v) $(7.5 \times 40.4) \div 25$

It can be written as

$$= 303/25$$

$$= 12.12$$

(vi) $2.1 \div (0.1 \times 0.1)$

Multiplying both numerator and denominator by 100

$$\begin{aligned} &= (2.1 \times 100) / (0.01 \times 100) \\ &\text{On further calculation} \\ &= 210/1 \\ &= 210 \end{aligned}$$

12. Fifteen identical articles weigh 31.50 kg. Find the weight of each article.

Solution:

It is given that
Total weight of 15 identical articles = 31.50 kg
So the weight of each article = $31.50 \div 15 = 2.1$ kg

Hence, the weight of each article is 2.1 kg.

13. The product of two numbers is 211.2. If one of these two numbers is 16.5, find the other number.

Solution:

It is given that
Product of two numbers = 211.2
One of the two numbers = 16.5
So the other number = $211.2 \div 16.5$
On further calculation
 $= (211.2 \times 10) / (16.5 \times 10)$
So we get
 $= 2112/165$
 $= 12.8$

14. One dozen identical articles cost ₹45.96. Find the cost of each article.

Solution:

It is given that
Cost of one dozen articles = ₹45.96
We know that one dozen = 12
So the cost of one article = $45.96 \div 12 = ₹3.83$

EXERCISE 4D

1. Find whether the given division forms a terminating decimal or a non-terminating decimal:

(i) $3 \div 8$

(ii) $8 \div 3$

(iii) $6 \div 5$

(iv) $5 \div 6$

(v) $12.5 \div 4$

(vi) $23 \div 0.7$

(vii) $42 \div 9$

(viii) $0.56 \div 0.11$

Solution:

(i) $3 \div 8$

We know that

$$3 \div 8 = 0.375$$

Therefore, it is terminating decimal.

$$\begin{array}{r} 0.375 \\ 8 \overline{) 3} \\ \underline{- 24} \\ 60 \\ \underline{- 56} \\ 40 \\ \underline{- 40} \\ 0 \end{array}$$

(ii) $8 \div 3$

We know that

$$8 \div 3 = 2.666$$

Therefore, it is a non-terminating decimal.

$$\begin{array}{r} 2.666 \\ 3 \overline{) 8} \\ \underline{- 6} \\ 20 \\ \underline{- 18} \\ 20 \\ \underline{- 18} \\ 20 \\ \underline{- 18} \\ 2 \end{array}$$

(iii) $6 \div 5$

We know that

$$6 \div 5 = 1.2$$

Therefore, it is terminating decimal.

$$\begin{array}{r} 1.2 \\ 5 \overline{) 6} \\ \underline{5} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

(iv) $5 \div 6$

We know that

$$5 \div 6 = 0.8333$$

Therefore, it is non-terminating decimal.

$$\begin{array}{r} 0.8333 \\ 6 \overline{) 5} \\ \underline{48} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 2 \end{array}$$

(v) $12.5 \div 4$

We know that

$$12.5 \div 4 = 3.125$$

Therefore, it is terminating decimal.

$$\begin{array}{r} 3.125 \\ 4 \overline{) 12.5} \\ \underline{12} \\ 5 \\ \underline{4} \\ 10 \\ \underline{8} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

(vi) $23 \div 0.7$

Multiplying by 10 we get

$$230 \div 7 = 32.8571428$$

Therefore, it is non-terminating decimal.

$$\begin{array}{r}
 32.85714 \\
 7 \overline{) 230} \\
 \underline{21} \\
 20 \\
 \underline{14} \\
 60 \\
 \underline{56} \\
 40 \\
 \underline{35} \\
 50 \\
 \underline{49} \\
 10 \\
 \underline{7} \\
 30 \\
 \underline{28} \\
 20 \\
 \underline{14} \\
 60 \\
 \underline{56} \\
 4
 \end{array}$$

(vii) $42 \div 9$

We know that

$$42 \div 9 = 4.666$$

Therefore, it is non-terminating decimal.

$$\begin{array}{r}
 4.666 \\
 9 \overline{) 42} \\
 \underline{36} \\
 60 \\
 \underline{54} \\
 60 \\
 \underline{54} \\
 60 \\
 \underline{54} \\
 6
 \end{array}$$

(viii) $0.56 \div 0.11$

Multiplying by 100

$$56 \div 11 = 5.0909$$

Therefore, it is non-terminating decimal.

$$\begin{array}{r}
 5.0909 \\
 11 \overline{) 56} \\
 \underline{55} \\
 100 \\
 \underline{99} \\
 100 \\
 \underline{99} \\
 1
 \end{array}$$

2. Express as recurring decimals:

(i) $1 \frac{1}{3}$

(ii) $\frac{10}{11}$

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

(iv) $\frac{2}{13}$

(v) $\frac{1}{9}$

(vi) $\frac{17}{90}$

(vii) $\frac{5}{18}$

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

Solution:

(i) $1 \frac{1}{3}$

It can be written as

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

$$\begin{array}{r}
 1.333 \\
 3 \overline{) 4} \\
 \underline{3} \\
 10 \\
 \underline{9} \\
 10 \\
 \underline{9} \\
 10 \\
 \underline{9} \\
 1
 \end{array}$$

(ii) $\frac{10}{11}$

It can be written as

$$\frac{10}{11} = 0.909090\dots = 0.\overline{90}$$

$$\begin{array}{r}
 0.90909 \\
 11 \overline{) 10} \\
 \underline{99} \\
 100 \\
 \underline{99} \\
 100 \\
 \underline{99} \\
 100 \\
 \underline{99} \\
 100 \\
 \underline{99} \\
 1
 \end{array}$$

(iii) $5/6$

It can be written as

$$5/6 = 0.8333\dots = 0.\overline{83}$$

$$\begin{array}{r}
 0.8333 \\
 6 \overline{) 5} \\
 \underline{48} \\
 20 \\
 \underline{18} \\
 20 \\
 \underline{18} \\
 20 \\
 \underline{18} \\
 2
 \end{array}$$

(iv) $2/13$

It can be written as

$$2/13 = 0.153846153846 = 0.\overline{153846}$$

$$\begin{array}{r}
 0.153846 \\
 13 \overline{) 2} \\
 \underline{13} \\
 70 \\
 \underline{65} \\
 50 \\
 \underline{39} \\
 110 \\
 \underline{104} \\
 60 \\
 \underline{52} \\
 80 \\
 \underline{78} \\
 20 \\
 \underline{13} \\
 70 \\
 \underline{65} \\
 50 \\
 \underline{39} \\
 110 \\
 \underline{104} \\
 60 \\
 \underline{52} \\
 80 \\
 \underline{78} \\
 2
 \end{array}$$

(v) $1/9$

It can be written as

$$1/9 = 0.1111 \dots = 0.\overline{1}$$

$$\begin{array}{r}
 0.1111 \\
 9 \overline{) 1} \\
 \underline{9} \\
 10 \\
 \underline{9} \\
 10 \\
 \underline{9} \\
 10 \\
 \underline{9} \\
 1
 \end{array}$$

(vi) $17/90$

It can be written as

$$17/90 = 0.1888 = 0.\overline{18}$$

$$\begin{array}{r}
 0.1888 \\
 90 \overline{) 17} \\
 \underline{90} \\
 800 \\
 \underline{720} \\
 800 \\
 \underline{720} \\
 800 \\
 \underline{720} \\
 80
 \end{array}$$

(vii) $5/18$

It can be written as

$$5/18 = 0.2777 \dots = 0.\overline{27}$$

$$\begin{array}{r}
 0.2777 \\
 18 \overline{) 5} \\
 \underline{36} \\
 140 \\
 \underline{126} \\
 140 \\
 \underline{126} \\
 14
 \end{array}$$

(viii) $7/12$

It can be written as

$$7/12 = 0.58333 \dots = 0.5\overline{83}$$

$$\begin{array}{r}
 0.58333 \\
 12 \overline{) 7} \\
 \underline{60} \\
 100 \\
 \underline{96} \\
 40 \\
 \underline{36} \\
 40 \\
 \underline{36} \\
 40 \\
 \underline{36} \\
 4
 \end{array}$$

3. Convert into vulgar fraction:

(i) $0.\overline{3}$

(ii) $0.\overline{8}$

(iii) $4.\overline{4}$

(iv) $23.\overline{7}$

Solution:

$$(i) 0.\overline{3}$$

It can be written as

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

So we get

$$= \frac{(3 - 0)}{9}$$

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

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

$$(ii) 0.\overline{8}$$

It can be written as

$$= \frac{8}{9}$$

So we get

$$= \frac{(8 - 0)}{9}$$

$$= \frac{8}{9}$$

$$(iii) 4.\overline{4}$$

It can be written as

$$= \frac{44}{9}$$

So we get

$$= \frac{(44 - 4)}{9}$$

$$= \frac{40}{9}$$

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

$$(iv) 23.\overline{7}$$

It can be written as

$$= \frac{237}{9}$$

So we get

$$= \frac{(237 - 23)}{9}$$

$$= \frac{214}{9}$$

$$= 23 \frac{7}{9}$$

4. Convert into vulgar fraction:

$$(i) 0.3\overline{5}$$

$$(ii) 2.2\overline{3}$$

$$(iii) 1.2\overline{8}$$

$$(iv) 5.2\overline{34}$$

Solution:

$$(i) 0.3\overline{5}$$

It can be written as

$$= \frac{35}{99}$$

So we get

$$= \frac{(35 - 0)}{99}$$

$$= \frac{35}{99}$$

$$(ii) 2.2\overline{3}$$

It can be written as

$$= 2 + 0.\overline{23}$$

So we get

$$= 2 + (23 - 0)/99$$

On further calculation

$$= 2 + 23/99$$

$$= 2 \frac{23}{99}$$

$$(iii) 1.\overline{28}$$

It can be written as

$$= 1 + 0.\overline{28}$$

So we get

$$= 1 + (28 - 0)/99$$

On further calculation

$$= 1 + 28/99$$

$$= 1 \frac{28}{99}$$

$$(iv) 5.\overline{234}$$

It can be written as

$$= 5 + 0.\overline{234}$$

So we get

$$= 5 + (234 - 0)/999$$

On further calculation

$$= 5 \frac{234}{999}$$

5. Convert into vulgar fraction:

$$(i) 0.3\overline{7}$$

$$(ii) 0.24\overline{5}$$

$$(iii) 0.68\overline{5}$$

$$(iv) 0.44\overline{2}$$

Solution:

$$(i) 0.3\overline{7}$$

It can be written as

$$= (37 - 3)/90$$

So we get

$$= 34/90$$

$$= 17/45$$

$$(ii) 0.24\overline{5}$$

It can be written as

$$= (245 - 2)/990$$

So we get

$$= 243/990$$

On further calculation

$$= 81/330$$

$$= 27/110$$

(iii) $0.6\overline{85}$

It can be written as

$$= (685 - 68) / 900$$

So we get

$$= 617 / 900$$

(iv) $0.4\overline{42}$

It can be written as

$$= (442 - 4) / 990$$

So we get

$$= 438 / 990$$

$$= 219 / 495$$



EXERCISE 4E

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1. Round off:

- (i) 0.07, 0.112, 3.59, 9.489 to the nearest tenths.
(ii) 0.627, 100.479, 0.065 and 0.024 to the nearest hundredths.
(iii) 4.83, 0.86, 451.943 and 9.08 to the nearest whole number.

Solution:

(i) We know that

$$0.07 = 0.1$$

$$0.112 = 0.1$$

$$3.59 = 3.6$$

$$9.489 = 9.5$$

$$(ii) 0.627 = 0.63$$

$$100.479 = 100.48$$

$$0.065 = 0.07$$

$$0.024 = 0.02$$

$$(iii) 4.83 = 5$$

$$0.86 = 1$$

$$451.943 = 452$$

$$9.08 = 9$$

2. Simplify, and write your answers correct to the nearest hundredths:

(i) 18.35×1.2

(ii) 62.89×0.02

Solution:

(i) $18.35 \times 1.2 = 22.02$

$$\begin{array}{r} 18.35 \\ \times 1.2 \\ \hline 36.7 \\ 1835x \\ \hline 22.02 \end{array}$$

(ii) $62.89 \times 0.02 = 1.2578 = 1.26$

$$\begin{array}{r} 62.89 \\ \times 0.02 \\ \hline 1.2578 \end{array}$$

3. Write the number of significant figures (digits) in:

(i) 35.06

(ii) 0.35

(iii) 7.0068

(iv) 19.0

(v) 0.0062

(vi) 4.2×0.6

(vii) 0.08×25

(viii) $3.6 \div 0.12$

Solution:

- (i) The number of significant figures in 35.06 is 4.
- (ii) The number of significant figures in 0.35 is 2.
- (iii) The number of significant figures in 7.0068 is 5.
- (iv) The number of significant figures in 19.0 is 3.
- (v) The number of significant figures in 0.0062 is 2.
- (vi) The number of significant figures in $4.2 \times 0.6 = 2.52$ is 3.
- (vii) The number of significant figures in $0.08 \times 25 = 2.00 = 2$ is 1.
- (viii) The number of significant figures in $3.6 \div 0.12$ or $360 \div 12 = 30$ is 2.

4. Write:

(i) 35.869, 0.008426, 4.952 and 382.7 correct to three significant figures.

(ii) 60.974, 2.8753, 0.001789 and 400.04 correct to four significant figures.

(iii) 14.29462, 19.2, 46356.82 and 69 correct to five significant figures.

Solution:

(i) Here by correcting to three significant figures.

$$35.869 = 35.9$$

$$0.008426 = 0.00843$$

$$4.952 = 4.95$$

$$382.7 = 383$$

(ii) Here by correcting to four significant figures

$$60.974 = 60.97$$

$$2.8753 = 2.875$$

$$0.001789 = 0.001789$$

$$400.04 = 400.0$$

(iii) Here by correcting to five significant figures

$$14.29462 = 14.295$$

$$19.2 = 19.200$$

$$46356.82 = 46357$$

$$69 = 69.000$$

EXERCISE 4F

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1. The weight of an object is 3.06 kg. Find the total weight of 48 similar objects.

Solution:

It is given that

Weight of an object = 3.06 kg

So the weight of 48 objects = $3.06 \times 48 = 146.88$ kg

$$\begin{array}{r}
 3.06 \\
 \times 48 \\
 \hline
 2448 \\
 1224x \\
 \hline
 14688
 \end{array}$$

2. Find the cost of 17.5 m cloth at the rate of ₹ 112.50 per metre.

Solution:

It is given that

Cost of cloth per metre = ₹ 112.50

So the cost of 17.5 m cloth = ₹ 112.50×17.5

On further calculation

= ₹ 1968.750

= ₹ 1968.75

$$\begin{array}{r}
 112.5 \\
 \times 17.5 \\
 \hline
 56250 \\
 78750x \\
 11250xx \\
 \hline
 1968750
 \end{array}$$

3. One kilogramme of oil costs ₹ 73.40. Find the cost of 9.75 kilogramme of the oil.

Solution:

It is given that

Cost of 1 kg oil = ₹ 73.40

So the cost of 9.75 kg oil = ₹ 73.40×9.75

On further calculation

= ₹ 715.6500

= ₹ 715.65

$$\begin{array}{r}
 73.4 \\
 \times 9.75 \\
 \hline
 36700 \\
 51380x \\
 66060xx \\
 \hline
 7156500
 \end{array}$$

4. Total weight of 8 identical objects is 51.2 kg. Find the weight of each object.

Solution:

It is given that

Weight of 8 identical objects = 51.2 kg

So the weight of 1 object = $51.2 \div 8 = 6.4$ kg

5. 18.5 m of cloth costs ₹ 666. Find the cost of 3.8 m cloth.

Solution:

It is given that

Cost of 18.5 m cloth = ₹ 666

So the cost of 1m cloth = ₹ $666 \div 18.5$ and cost of 3.8 m cloth

We can write it as

= $(666 \div 18.5) \times 3.8$

Multiplying by 10

= $(6660 \div 185) \times 3.8$

= 36×3.8

So we get

= ₹ 136.80

185	$\begin{array}{r} 36 \\ \hline 6660 \\ - 555 \\ \hline 1110 \\ - 1110 \\ \hline 0 \end{array}$	$\begin{array}{r} 3.8 \\ \hline \times 36 \\ \hline 228 \\ \hline 114x \\ \hline 1368 \end{array}$
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6. Find the value of:

(i) 0.5 of ₹ 7.60 + 1.62 of ₹ 30

(ii) 2.3 of 7.3 kg + 0.9 of 0.48 kg

(iii) 6.25 of 8.4 – 4.7 of 3.24

(iv) 0.98 of 235 – 0.09 of 3.2

Solution:

(i) 0.5 of ₹ 7.60 + 1.62 of ₹ 30

It can be written as

= ₹ 3.80 + ₹ 48.60

So we get

= ₹ 52.40

$\begin{array}{r} 7.6 \\ \hline \times 0.5 \\ \hline 3.8 \end{array}$	$\begin{array}{r} 1.62 \\ \hline \times 30 \\ \hline 48.6 \end{array}$
---	--

(ii) 2.3 of 7.3 kg + 0.9 of 0.48 kg

It can be written as

= 16.79 kg + 0.432 kg

So we get
= 17.222 kg

$\begin{array}{r} 7.3 \\ \times 2.3 \\ \hline 219 \\ 146x \\ \hline 1679 \end{array}$	$\begin{array}{r} 0.48 \\ \times 0.9 \\ \hline 0.432 \end{array}$	$\begin{array}{r} 16.79 \\ + 0.432 \\ \hline 17.222 \end{array}$
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(iii) 6.25 of 8.4 – 4.7 of 3.24

It can be written as
= 52.500 – 15.228

So we get
= 37.272

$\begin{array}{r} 6.25 \\ \times 8.4 \\ \hline 2500 \\ 5000x \\ \hline 52500 \end{array}$	$\begin{array}{r} 3.24 \\ \times 4.7 \\ \hline 2268 \\ 1296x \\ \hline 15228 \end{array}$
---	---

(iv) 0.98 of 235 – 0.09 of 3.2

It can be written as
= 230.30 – 0.288

So we get
= 230.012

$\begin{array}{r} 230.3 \\ - 0.288 \\ \hline 230.012 \end{array}$	$\begin{array}{r} 3.2 \\ \times 0.09 \\ \hline 0.288 \end{array}$	$\begin{array}{r} 235 \\ \times 0.98 \\ \hline 1880 \\ 2115x \\ \hline 23030 \end{array}$
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7. Evaluate:

(i) 5.6 – 1.5 of 3.4

(ii) 4.8 ÷ 0.04 of 5

(iii) 0.72 of 80 ÷ 0.2

(iv) 0.72 ÷ 80 of 0.2

(v) 6.45 ÷ (3.9 – 1.75)

(vi) 0.12 of (0.104 – 0.02) + 0.36 × 0.5

Solution:

(i) 5.6 – 1.5 of 3.4

It can be written as

= 5.6 – 5.1

So we get

= 0.5

$$\begin{array}{r} 3.4 \\ \times 1.5 \\ \hline 170 \\ 34x \\ \hline 5.1 \end{array}$$

(ii) $4.8 \div 0.04$ of 5

It can be written as

$$= 4.8 \div 0.20$$

Multiplying by 10

$$= 48 \div 2$$

$$= 24$$

(iii) 0.72 of $80 \div 0.2$

It can be written as

$$= 57.60 \div 0.2$$

Multiplying by 10

$$= 576 \div 2$$

$$= 288$$

(iv) $0.72 \div 80$ of 0.2

It can be written as

$$= 0.72 \div 16.0$$

Multiplying by 100

$$= 72 \div 1600$$

$$= 0.045$$

$$\begin{array}{r} 0.045 \\ 1600 \overline{) 72} \\ \underline{-6400} \\ 8000 \\ \underline{-8000} \\ 0 \end{array}$$

(v) $6.45 \div (3.9 - 1.75)$

It can be written as

$$= 6.45 \div 2.15$$

Multiplying by 100

$$= 645 \div 215$$

$$= 3$$

$$\begin{array}{r} 3 \\ 215 \overline{) 645} \\ \underline{-645} \\ 0 \end{array}$$

(vi) 0.12 of $(0.104 - 0.02) + 0.36 \times 0.5$

It can be written as

$$= 0.12 \text{ of } 0.084 + 0.36 \times 0.5$$

So we get

$$= 0.01008 + 0.180$$

$$= 0.19008$$

$$\begin{array}{r} 0.104 \\ -0.02 \\ \hline 0.084 \end{array}$$

$$\begin{array}{r} 0.084 \\ \times 0.12 \\ \hline 0.01008 \end{array}$$

$$\begin{array}{r} 0.01008 \\ + 0.18 \\ \hline 0.19008 \end{array}$$

