Decimals
Exercise 3C

Q1

Answer :

We have the following:

(i) 73.92 × 10 = 739.2 [Shifting the decimal point to the right by 1 place]
(ii) 7.54 × 10 = 75.4 [Shifting the decimal point to the right by 1 place]
(iii) 84.003 × 10 = 840.03 [Shifting the decimal point to the right by 1 place]
(iv) 0.83 × 10 = 8.3 [Shifting the decimal point to the right by 1 place]
(v) 0.7 × 10 = 7 [Shifting the decimal point to the right by 1 place]
(vi) 0.032 × 10 = 0.32 [Shifting the decimal point to the right by 1 place]

Q2

Answer :

We have the following:

(i) 2.397 × 100 = 239.7 [Shifting the decimal point to the right by 2 places]
(ii) 6.83 × 100 = 683 [Shifting the decimal point to the right by 2 places]
(iii) 2.9 × 100 = 290 [Shifting the decimal point to the right by 2 places]
(iv) 0.08 ×100 = 8 [Shifting the decimal point to the right by 2 places]
(v) 0.6 × 100 = 60 [Shifting the decimal point to the right by 2 places]
(vi) 0.003 × 100 = 0.3 [Shifting the decimal point to the right by 2 places]

Q3

Answer :

We have:
(i) 6.7314 × 1000 = 6731.4 [Shifting the decimal point to the right by 3 places]
(ii) 0.182 × 1000 = 182 [Shifting the decimal point to the right by 3 places]
(iii) 0.076 × 1000 = 76 [Shifting the decimal point to the right by 3 places]
(iv) 6.25 × 1000 = 6250 [Shifting decimal point to the right by 3 places]
(v) 4.8 × 1000 = 4800 [Shifting the decimal point to the right by 3 places]
(vi) 0.06 × 1000 = 60 [Shifting the decimal point to the right by 3 places]

Q4

Answer :

We have the following:

(i) 54 × 16 = 864
∴ 5.4 × 16 = 86.4 [1 place of decimal]

(ii) 365 × 19 = 6935
∴ 3.65 × 19 = 69.35 [2 places of decimal]

(iii) 854 × 12 = 10248
∴ 0.854 × 12 = 10.248 [3 places of decimal]

(iv) 3673 × 48 = 176304
∴ 36.78 × 48 = 1763.04 [2 places of decimal]

(v) 4125 × 86 = 354750
∴ 4.125 × 86 = 354.750 [3 places of decimal]
= 354.75

(vi) 10406 × 75 = 780450
∴ 104.06 × 75 = 7804.50 [2 places of decimal]
= 7804.5

(vii) 6032 × 124 = 747968
∴ 6.032 × 124 = 747.968 [3 places of decimal]

(viii) 146 × 69 = 10074
∴ 0.0146 × 69 = 1.0074 [4 places of decimal]

(ix) 125 × 327 = 40875
∴ 0.00125 × 327 = 0.40875 [5 places of decimal]

Q5

Answer :

(i) First, we will multiply 76 by 24.

$$\begin{array}{r} 76 \\ \times 24 \\ \hline 304 \\ 152\times \\ \hline 1824 \end{array}$$

∴ 76 × 24 = 1824
Sum of decimal places in the given numbers = (1 + 1) = 2
∴ 7.6 × 2.4 = 18.24 [2 places of decimal]

(ii) First, we will multiply 345 by 63.

$$\begin{array}{r} 345 \\ \times 63 \\ \hline 1035 \\ 2070\times \\ \hline 21735 \end{array}$$

∴ 345 × 63 = 21735
Sum of decimal places in the given numbers = (2 + 1) = 3
∴ 3.45 × 6.3 = 21.735 [3 places of decimal]

(iii) First, we will multiply 54 by 27.

$$\begin{array}{r} 54 \\ \times 27 \\ \hline 378 \\ 108\times \\ \hline 1458 \end{array}$$

∴ 54 × 27 = 1458

Sum of decimal places in the given numbers = (2 + 2) = 4

∴ 0.54 × 0.27 = 0.1458 [4 places of decimal]

(iv) First, we will multiply 568 by 49.

$$\begin{array}{r} 568 \\ \times 49 \\ \hline 5112 \\ 2072\times \\ \hline 27832 \end{array}$$

∴ 568 × 49 = 27832

Sum of decimal places in the given numbers = (3 + 1) = 4

∴ 0.568 × 4.9 = 2.7832 [4 places of decimal]

(v) First, we multiply 654 by 9.

$$\begin{array}{r} 654 \\ \times 9 \\ \hline 5886 \end{array}$$

∴ 654 × 9 = 5886

Sum of decimal places in the given numbers = (2 + 2) = 4

∴ 6.54 × 0.09 = 0.5886 [4 places of decimal]

(vi) First, we will multiply 387 by 125.

$$\begin{array}{r} 387 \\ \times 125 \\ \hline 1935 \\ 774\times \\ 387\times\times \\ \hline 48375 \end{array}$$

∴ 387 × 125 = 48375

Sum of decimal places in the given numbers = (2 + 2) = 4

∴ 3.87 × 1.25 = 4.8375 [4 places of decimal]

(vii) First, we will multiply 38 by 6.

$$\begin{array}{r} 38 \\ \times 6 \\ \hline 228 \end{array}$$

∴ 38 × 6 = 228

Sum of decimal places in the given numbers = (2 + 2) = 4

∴ 0.06 × 0.38 = 0.0228 [4 places of decimal]

(viii) First, we will multiply 623 by 75.

$$\begin{array}{r} 623 \\ \times 75 \\ \hline 3115 \\ 4361\times \\ \hline 46725 \end{array}$$

∴ 623 × 75 = 46725

Sum of decimal places in the given numbers = (3 + 2) = 5

∴ 0.623 × 0.75 = 0.46725 [5 places of decimal]

(ix) First, we will multiply 14 by 46.

$$\begin{array}{r} 14 \\ \times 46 \\ \hline 84 \\ 56\times \\ \hline 644 \end{array}$$

∴ 14 × 46 = 644

Sum of decimal places in the given numbers = (3 + 2) = 5

∴ 0.014 × 0.46 = 0.00644 [5 places of decimal]

(x) First, we will multiply 545 by 176.

$$\begin{array}{r} 545 \\ \times 176 \\ \hline 3270 \\ 3815\times \\ 545\times\times \\ \hline 95920 \end{array}$$

∴ 545 × 176 = 95920

Sum of decimal places in the given numbers = (1 + 2) = 3

∴ 54.5 × 1.76 = 95.920 [3 places of decimal]

= 95.92

(xi) First, we will multiply 45 by 24.

$$\begin{array}{r} 45 \\ \times 24 \\ \hline 180 \\ 90\times \\ \hline 1080 \end{array}$$

∴ 45 × 24 = 1080

Sum of decimal places in the given numbers = (3 + 1) = 4

∴ 0.045 × 2.4 = 0.1080 [4 places of decimal]

= 0.108

(xii) First, we will multiply 1245 by 64.

$$\begin{array}{r} 1245 \\ \times 64 \\ \hline 4980 \\ 7470\times \\ \hline 79680 \end{array}$$

∴ 1245 × 64 = 79680

Sum of decimal places in the given numbers = (3 + 1) = 4

∴ 1.245 × 6.4 = 7.9680 [4 places of decimal]

= 7.968

Q6

Answer :

(i) First, we will find the product 13 × 1.3 × 0.13.

Now, 13 × 13 × 13 = 169 x 13

= 2197

$$\begin{array}{r} 169 \\ \times 13 \\ \hline 507 \\ 169\times \\ \hline 2197 \end{array}$$

Sum of decimal places in the given numbers = (1 + 2) = 3

So, the product must have three decimal places.

∴ 13 × 1.3 × 0.13 = 2.197

(ii) First, we will find the product 2.4 × 1.5 × 2.5.

Now, 24 × 15 × 25 = 360 x 25

= 9000

$$\begin{array}{r} 360 \\ \times 25 \\ \hline 1800 \\ 720\times \\ \hline 9000 \end{array}$$

Sum of decimal places in the given numbers = (1 + 1 + 1) = 3

So, the product must have three decimal places.

∴ 2.4 × 1.5 × 2.5 = 9.000

= 9

(iii) First, we will find the product 0.8 × 3.5 × 0.05.

Now, 8 × 35 × 5 = 280 × 5

= 1400

$$\begin{array}{r} 280 \\ \times 5 \\ \hline 1400 \end{array}$$

Sum of decimal places in the given numbers = (1 + 1 + 2) = 4

So, the product must have four decimal places.

∴ 0.8 × 3.5 × 0.05 = 0.1400

= 0.14

(iv) First, we will find the product 0.2 × 0.02 × 0.002.

Now, 2 × 2 × 2 = 4 × 2

= 8

Sum of decimal places in the given numbers = (1 + 2 + 3) = 6

So, the product must have six decimal places.

∴ 0.2 × 0.02 × 0.002 = 0.000008

(v) First, we will find the product 11.1 × 1.1 × 0.11.

Now, 111 × 11 × 11 = 1221 × 11

= 13431

$$\begin{array}{r} 1221 \\ \times 11 \\ \hline 1221 \\ 1221\times \\ \hline 13431 \end{array}$$

Sum of decimal places in the given numbers = (1 + 1 + 2) = 4

So, the product must have four decimal places.

∴ 11.1 × 1.1 × 0.11 = 1.3431

(vi) First, we will find the product 2.1 × 0.21 × 0.021.

Now, 21 × 21 × 21 = 441 × 21

= 9261

$$\begin{array}{r} 441 \\ \times 21 \\ \hline 441 \\ 882\times \\ \hline 9261 \end{array}$$

Sum of decimal places in the given numbers = (1 + 2 + 3) = 6

So, the product must have six decimal places.

∴ 2.1 × 0.21 × 0.021 = 0.009261

Q7

Answer :

(i) $(1.2)^2 = 1.2 \times 1.2$

First, we will find the product 1.2×1.2.

Now, $12 \times 12 = 144$

Sum of decimal places in the given numbers = (1 + 1) = 2

So, the product must have two decimal places.

$\therefore (1.2)^2 = 1.2 \times 1.2 = 1.44$

(ii) $(0.7)^2 = 0.7 \times 0.7$

First, we will find the product 0.7×0.7.

Now, $7 \times 7 = 49$

Sum of decimal places in the given numbers = (1 + 1) = 2

So, the product must have two decimal places.

$\therefore (0.7)^2 = 0.7 \times 0.7 = 0.49$

(iii) $(0.04)^2 = 0.04 \times 0.04$

First, we will find the product 0.04×0.04.

Now, $4 \times 4 = 16$

Sum of decimal places in the given numbers = (2 + 2) = 4

So, the product must have four decimal places.

$\therefore (0.04)^2 = 0.04 \times 0.04 = 0.0016$

(iv) $(0.11)^2 = 0.11 \times 0.11$

First, we will find the product 0.11×0.11.

Now, $11 \times 11 = 121$

Sum of decimal places in the given numbers = (2 + 2) = 4

So, the product must have four decimal places.

$\therefore (0.11)^2 = 0.11 \times 0.11 = 0.0121$

Q8

Answer :

(i) $(0.3)^3 = 0.3 \times 0.3 \times 0.3$

First, we will find the product $3 \times 3 \times 3$.

Now, $3 \times 3 \times 3 = 27$

Sum of decimal places in the given numbers = (1 + 1 + 1) = 3

So, the product must have three places of decimal.

$\therefore (0.3)^3 = 0.3 \times 0.3 \times 0.3 = 0.027$

(ii) $(0.05)^3 = 0.05 \times 0.05 \times 0.05$

First, we will find the product $5 \times 5 \times 5$.

Now, $5 \times 5 \times 5 = 125$

Sum of decimal places in the given numbers = (2 + 2 + 2) = 6

So, the product must have six decimal places.

$\therefore (0.05)^3 = 0.05 \times 0.05 \times 0.05 = 0.000125$

(iii) $(1.5)^3 = 1.5 \times 1.5 \times 1.5$

First, we will find the product $15 \times 15 \times 15$.

Now, $15 \times 15 \times 15 = 225 \times 15 = 3375$

$$\begin{array}{r} 225 \\ \times 15 \\ \hline 1125 \\ 225\times \\ \hline 3375 \end{array}$$

Sum of decimal places in the given numbers = (1 + 1 + 1) = 3

So, the product must have three decimal places.

$\therefore (1.5)^3 = 1.5 \times 1.5 \times 1.5 = 3.375$

Q9

Answer :

Distance covered by the bus in 1 hour = 62.5 km

$\therefore$ Distance covered in 18 hours = (62.5×18) km

= 1125 km

Hence, the bus can cover a distance of 1125 km in 18 hours.

Q10

Answer :

Weight of 1 tin of oil = 16.8 kg
∴ Weight of 45 such tins = (16.8 × 45) kg
= 756 kg
Hence, the weight of 45 tins of oil is 756 kg.

Q11

Answer :

Weight of 1 bag of wheat = 97.8 kg
∴ Weight of 500 such bags = (97.8 x 500) kg
= 48900 kg
Hence, the weight of 500 bags of wheat is 48900 kg.

Q12

Answer :

Weight of 1 bag of sugar = 48.450 kg
∴ Weight of 16 bags of sugar = (48.450 × 16) kg
= 775.2 kg

$$\begin{array}{r} 48450 \\ \times 16 \\ \hline 290700 \\ 48450\times \\ \hline 775200 \end{array}$$

Hence, the weight of 16 bags of sugar is 775.2 kg.

Q13

Answer :

Capacity of 1 sauce bottle = 0.845 kg
∴ Capacity of 72 such bottles = (0.845 × 72) kg
= 60.84 kg

$$\begin{array}{r} 845 \\ \times 72 \\ \hline 1690 \\ 5915\times \\ \hline 60840 \end{array}$$

Hence, the capacity of 72 bottles of sauce will be 60.84 kg.

Q14

Answer :

Weight of 1 bottle of jam = 925 g =0.925 kg
∴ Weight of 25 such bottles = (0.925 × 25) kg
= 23.125 kg

$$\begin{array}{r} 925 \\ \times 25 \\ \hline 6425 \\ 1850\times \\ \hline 23125 \end{array}$$

∴ The weight of 25 bottles of jam will be 23.125 kg.

Q15

Answer :

Capacity of 1 drum of oil = 16.850 litres
∴ Capacity of 48 such drums = (16.850 x 48) litres
= 808.800 litres

$$\begin{array}{r} 16850 \\ \times 48 \\ \hline 134800 \\ 67400\times \\ \hline 808800 \end{array}$$

Hence, the capacity of 48 drums of oil is 808.800 litres.

Q16

Answer :

Cost of 1 kg of rice =Rs 56.80
∴ Cost of 16.25 kg of rice = Rs (56.80 × 16.25)
= Rs 923

$$\begin{array}{r} 5680 \\ \times 1625 \\ \hline 28400 \\ 11360\times \\ 34080\times\times \\ 5680\times\times\times \\ \hline 9230000 \end{array}$$

Hence, the cost of 16.25 kg of rice is Rs 923.

Q17

Answer :

Cost of 1 m of cloth = Rs 108.50
∴ Cost of 18.5 m of cloth = Rs (108.50 x 18.5)
= Rs 2007.25

$$\begin{array}{r} 10850 \\ \times 185 \\ \hline 54250 \\ 86800\times \\ 10850\times\times \\ \hline 2007250 \end{array}$$

Hence, the cost of 18.5 m of cloth is Rs 2007.25.

Q18

Answer :

Distance covered by the car with 1 litre of petrol = 8.6 km
∴ Distance covered with 36.5 litres of petrol = (8.6 × 36.5) km
= 313.900 km
Hence, the distance covered by the car with 36.5 litres of petrol is 313.900 km.

Q19

Answer :

Charges for 1 km = Rs 9.80
∴ Charges for 106.5 km = Rs (9.80 × 106.5)
= Rs 1043.70
Hence, the taxi driver will charge Rs 1043.70 for a journey of 106.5 km.