

Decimals

Exercise 3A

Q1

Answer :

We have:

$$(i) 0.8 = \frac{8}{10} = \frac{8 \div 2}{10 \div 2} = \frac{4}{5}$$

$$(ii) 0.75 = \frac{75}{100} = \frac{75 \div 25}{100 \div 25} = \frac{3}{4}$$

$$(iii) 0.06 = \frac{6}{100} = \frac{6 \div 2}{100 \div 2} = \frac{3}{50}$$

$$(iv) 0.285 = \frac{285}{1000} = \frac{285 \div 5}{1000 \div 5} = \frac{57}{200}$$

Q2

Answer :

We have:

$$(i) 5.6 = \frac{56}{10} = \frac{56 \div 2}{10 \div 2} = \frac{28}{5} = 5 \frac{3}{5}$$

$$(ii) 12.25 = \frac{1225}{100} = \frac{1225 \div 25}{100 \div 25} = \frac{49}{4} = 12 \frac{1}{4}$$

$$(iii) 6.004 = \frac{6004}{1000} = \frac{6004 \div 4}{1000 \div 4} = \frac{1501}{250} = 6 \frac{1}{250}$$

$$(iv) 4.625 = \frac{4625}{1000} = \frac{4625 \div 125}{1000 \div 125} = \frac{37}{8} = 4 \frac{5}{8}$$

Q3

Answer :

(i) $\frac{47}{10}$

On dividing, we get:

$$\begin{array}{r} 10 \overline{) 47} 4.7 \\ \underline{-40} \\ 70 \\ \underline{-70} \\ \times \\ \therefore \frac{47}{10} = 4.7 \end{array}$$

(ii) $\frac{156}{100}$

On dividing, we get:

Q4

Answer :

Converting the given decimals into like decimals, we have:

(i) 6.500, 16.030, 0.274 and 119.400

(ii) 3.50, 0.67, 15.60 and 4.00

Q5

Answer :

We have,

(i) Comparing the whole number part, $78 > 69$.

Thus, $78.23 > 69.85$

(ii) Converting the decimals into like decimals, we get 3.406 and 3.460.

Comparing the whole number parts, $3 = 3$

Comparing the tenths digit, $4 = 4$

Comparing the hundredths digit, $6 > 0$

Thus, $3.406 < 3.46$

(iii) Comparing the whole number parts, $5 = 5$

Comparing the tenths digit, $6 < 8$

Thus, $5.68 < 5.86$

(iv) Converting the decimals into like decimals, we get 14.050 and 14.005.

Comparing the whole number parts, $14 = 14$

Comparing the tenths digit, $0 = 0$

Comparing the hundredths digit, $5 > 0$

Thus, $14.05 > 14.005$

(v) Converting the decimals into like decimals, we get 1.850 and 1.805.

Comparing the whole number parts, $1 = 1$

Comparing the tenths digit, $8 = 8$

Comparing the hundredths digit, $5 > 0$

Thus, $1.85 > 1.805$

(vi) Comparing the whole number parts, $0 < 1$

Thus, $0.98 < 1.07$

Q6

Answer :

(i) Converting the given decimals into like decimals, we get:

4.60, 7.40, 4.58, 7.32, 4.06

Clearly, $4.06 < 4.58 < 4.60 < 7.32 < 7.40$

Hence, the given decimals in ascending order are 4.06, 4.58, 4.6, 7.32 and 7.4.

(ii) Converting the given decimals into like decimals, we get:

0.50, 5.50, 5.05, 0.05, 5.55

Clearly, $0.05 < 0.50 < 5.05 < 5.50 < 5.55$

Hence, the given decimals in ascending order are 0.05, 0.5, 5.05, 5.5 and 5.55.

(iii) Converting the given decimals into like decimals, we get:

6.84, 6.48, 6.80, 6.40, 6.08

Clearly, $6.08 < 6.40 < 6.48 < 6.80 < 6.84$

Hence, the given decimals in ascending order are 6.08, 6.4, 6.48, 6.8 and 6.84.

(iv) Converting the given decimals into like decimals, we get:

2.200, 2.202, 2.020, 22.200, 2.002

Clearly, $2.002 < 2.020 < 2.200 < 2.202 < 22.200$

Hence, the given decimals in ascending order are 2.002, 2.02, 2.2, 2.202 and 22.2.

Q7

Answer :

(i) Converting the given decimals into like decimals, we get:

7.40, 8.34, 74.40, 7.44, 0.74

Clearly, $74.40 > 8.34 > 7.44 > 7.40 > 0.74$

Hence, the given decimals in descending order are 74.4, 8.34, 7.44, 7.4 and 0.74.

(ii) Converting the given decimals into like decimals, we get:

2.600, 2.260, 2.060, 2.007, 2.300

Clearly, $2.600 > 2.300 > 2.260 > 2.060 > 2.007$

Hence, the given decimals in descending order are 2.6, 2.3, 2.26, 2.06 and 2.007.

Q8

Answer :

$$45 \text{ mm} = \frac{45}{10} \text{ cm} = 4.5 \text{ cm}$$

$$= 4.5 \text{ cm} = \frac{4.5}{100} \text{ m} = 0.045 \text{ m}$$

$$= 0.045 \text{ m} = \frac{0.045}{1000} \text{ km} = 0.000045 \text{ km}$$

$$\therefore 45 \text{ mm} = 4.5 \text{ cm} = 0.045 \text{ m} = 0.000045 \text{ km}$$

Q9

Answer :

We have:

$$(i) 8 \text{ paise} = \text{Rs } \frac{8}{100} = \text{Rs } 0.08$$

$$(ii) 9 \text{ rupees } 75 \text{ paise} = \text{Rs } \left(9 + \frac{75}{100}\right) = \text{Rs } (9 + 0.75) = \text{Rs } 9.75$$

$$(iii) 8 \text{ rupees } 5 \text{ paise} = \text{Rs } \left(8 + \frac{5}{100}\right) = \text{Rs } (8 + 0.05) = \text{Rs } 8.05$$

Q10

Answer :

We have:

$$(i) 65 \text{ m} = \frac{65}{1000} \text{ km} = 0.065 \text{ km}$$

$$\therefore 65 \text{ m} = 0.065 \text{ km}$$

$$(ii) 284 \text{ m} = \frac{284}{1000} \text{ km} = 0.284 \text{ km}$$

$$(iii) 3 \text{ km } 5 \text{ m} = \left(3 + \frac{5}{1000}\right) = (3 + 0.005) = 3.005 \text{ km}$$

Decimals

Exercise 3B

Q1

Answer :

Converting the given decimals into like decimals, we get:

16.00, 8.70, 0.94, 6.80 and 7.77

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 16.00 \\ 8.70 \\ 0.94 \\ 6.80 \\ 7.77 \\ \hline 40.21 \end{array}$$

Hence, the sum of the given decimals is 40.21

Q2

Answer :

Converting the given decimals into like decimals, we get:

18.600, 206.370, 8.008, 26.400 and 6.900

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 18.600 \\ 206.370 \\ 8.008 \\ 26.400 \\ 6.900 \\ \hline 266.278 \end{array}$$

Hence, the sum of the given decimals is 266.278.

Q3

Answer :

Converting the given decimals into like decimals, we get:

63.50, 9.70, 0.80, 26.66 and 12.17

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 63.50 \\ 9.70 \\ 0.80 \\ 26.66 \\ 12.17 \\ \hline 112.83 \end{array}$$

Hence, the sum of the given decimals is 112.83.

Q4

Answer :

Converting the given decimals into like decimals, we get:

17.400, 86.390, 9.435, 8.800 and 0.060

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 17.400 \\ 86.390 \\ 9.435 \\ 8.800 \\ 0.060 \\ \hline 122.085 \end{array}$$

Hence, the sum of the given decimals is 122.085.

Q5

Answer :

Converting the given decimals into like decimals, we get:

26.900, 19.740, 231.769 and 0.048

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 26.900 \\ 19.740 \\ 231.769 \\ 0.048 \\ \hline 278.457 \end{array}$$

Hence, the sum of the given decimals is 278.457.

Q6

Answer :

Converting the given decimals into like decimals, we get:

23.800, 8.940, 0.078 and 214.600

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 23.800 \\ 8.940 \\ 0.078 \\ 214.600 \\ \hline 247.418 \end{array}$$

Hence, the sum of the given decimals is 247.418.

Q7

Answer :

Converting the given decimals into like decimals, we get:

6.606, 66.600, 666.000, 0.066 and 0.660

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 6.606 \\ 66.600 \\ 666.000 \\ 0.066 \\ 0.660 \\ \hline 739.932 \end{array}$$

Hence, the sum of the given decimals is 739.932.

Q8

Answer :

Converting the given decimals into like decimals, we get:

9.090, 0.909, 99.900, 9.990 and 0.099

Writing these decimals in column form and adding, we get:

$$\begin{array}{r} 9.090 \\ 0.909 \\ 99.900 \\ 9.990 \\ 0.099 \\ \hline 119.988 \end{array}$$

Hence, the sum of the given decimals is 119.988.

Q9

Answer :

The given decimals are like decimals. Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 72.43 \\ -14.79 \\ \hline 57.64 \end{array}$$

$$\therefore (72.43 - 14.79) = 57.64$$

Q10

Answer :

Converting the given decimals into like decimals, we get:

36.74 and 52.60

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 52.60 \\ -36.74 \\ \hline 15.86 \end{array}$$

$$\therefore (52.60 - 36.74) = 15.86$$

Q11

Answer :

Converting the given decimals into like decimals, we get:

13.876 and 22.000

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 22.000 \\ -13.876 \\ \hline 8.124 \end{array}$$

$$\therefore (22.000 - 13.876) = 8.124$$

Q12

Answer :

Converting the given decimals into like decimals, we get:

15.079 and 24.160

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 24.160 \\ -15.079 \\ \hline 9.081 \end{array}$$

$$\therefore (24.160 - 15.079) = 9.081$$

Q13

Answer :

Converting the given decimals into like decimals, we get:

0.680 and 1.007

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 1.007 \\ -0.680 \\ \hline 0.327 \end{array}$$

$$\therefore (1.007 - 0.680) = 0.327$$

Q14

Answer :

Converting the given decimals into like decimals, we get:

0.4678 and 5.0500

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 5.0500 \\ -0.4678 \\ \hline 4.5822 \end{array}$$

$$\therefore (5.0500 - 0.4678) = 4.5822$$

Q15

Answer :

Converting the given decimals into like decimals, we get:

2.5307 and 8.0000

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 8.0000 \\ -2.5307 \\ \hline 5.4693 \end{array}$$

$$\therefore (8.0000 - 2.5307) = 5.4693$$

Q16

Answer :

Writing the given like decimals in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 9.001 \\ -6.732 \\ \hline 2.269 \end{array}$$

$$\therefore (9.001 - 6.732) = 2.269$$

Q17

Answer :

Converting the given decimals into like decimals, we get:

5.746 and 9.100

Writing them in column form with the larger one at the top and subtracting them, we get:

$$\begin{array}{r} 9.100 \\ -5.746 \\ \hline 3.354 \end{array}$$

$$\therefore (9.100 - 5.746) = 3.354$$

Q18

Answer :

Converting the given decimals into like decimals, we get:

63.58 and 92.00

Thus, required number = $(92.00 - 63.58) = 28.42$

Hence, 28.42 should be added to 63.58 to get 92.

Q19

Answer :

Converting the given decimals into like decimals, we get:

8.100 and 0.813

Thus, required number = $(8.100 - 0.813) = 7.287$

Hence, 7.287 should be subtracted from 8.1 to get 0.813.

Q20

Answer :

Converting the given decimals into like decimals, we get:

32.67 and 60.10

Thus, required number = $(60.10 - 32.67) = 27.43$

Hence, 32.67 should be increased by 27.43 to get 60.1.

Q21

Answer :

Converting the given decimals into like decimals, we get:

74.30 and 26.87

Thus, required number = $(74.30 - 26.87) = 47.43$

Hence, 74.3 should be decreased by 47.43 to get 26.87.

Q22

Answer :

Total amount spent by Rohit on purchasing of the given articles = Rs $(23.75 + 2.85 + 15.90)$
= Rs 42.50

Money given to the shopkeeper = Rs 50

∴ Money returned by the shopkeeper = Rs $(50 - 42.50)$
= Rs 7.50

Thus, amount received by Rohit = Rs 7.50

Decimals

Exercise 3C

Q1

Answer :

We have the following:

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

Q2

Answer :

We have the following:

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

Q3

Answer :

We have:

- | | |
|-----------------------------------|---|
| (i) $6.7314 \times 1000 = 6731.4$ | [Shifting the decimal point to the right by 3 places] |
| (ii) $0.182 \times 1000 = 182$ | [Shifting the decimal point to the right by 3 places] |
| (iii) $0.076 \times 1000 = 76$ | [Shifting the decimal point to the right by 3 places] |
| (iv) $6.25 \times 1000 = 6250$ | [Shifting decimal point to the right by 3 places] |
| (v) $4.8 \times 1000 = 4800$ | [Shifting the decimal point to the right by 3 places] |
| (vi) $0.06 \times 1000 = 60$ | [Shifting the decimal point to the right by 3 places] |

Q4

Answer :

We have the following:

- (i) $54 \times 16 = 864$
 $\therefore 5.4 \times 16 = 86.4$ [1 place of decimal]
- (ii) $365 \times 19 = 6935$
 $\therefore 3.65 \times 19 = 69.35$ [2 places of decimal]
- (iii) $854 \times 12 = 10248$
 $\therefore 0.854 \times 12 = 10.248$ [3 places of decimal]
- (iv) $3673 \times 48 = 176304$
 $\therefore 36.78 \times 48 = 1763.04$ [2 places of decimal]
- (v) $4125 \times 86 = 354750$
 $\therefore 4.125 \times 86 = 354.750$ [3 places of decimal]
 $= 354.75$
- (vi) $10406 \times 75 = 780450$
 $\therefore 104.06 \times 75 = 7804.50$ [2 places of decimal]
 $= 7804.5$
- (vii) $6032 \times 124 = 747968$
 $\therefore 6.032 \times 124 = 747.968$ [3 places of decimal]
- (viii) $146 \times 69 = 10074$
 $\therefore 0.0146 \times 69 = 1.0074$ [4 places of decimal]
- (ix) $125 \times 327 = 40875$
 $\therefore 0.00125 \times 327 = 0.40875$ [5 places of decimal]

Q5

Answer :

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

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

$$\therefore 76 \times 24 = 1824$$

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

$$\therefore 7.6 \times 2.4 = 18.24 \quad [2 \text{ places of decimal}]$$

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

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

$$\therefore 345 \times 63 = 21735$$

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

$$\therefore 3.45 \times 6.3 = 21.735 \quad [3 \text{ places of decimal}]$$

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

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

$$\therefore 54 \times 27 = 1458$$

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

$$\therefore 0.54 \times 0.27 = 0.1458 \quad [4 \text{ places of decimal}]$$

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

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

$$\therefore 568 \times 49 = 27832$$

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

$$\therefore 0.568 \times 4.9 = 2.7832 \quad [4 \text{ places of decimal}]$$

(v) First, we multiply 654 by 9.

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

$$\therefore 654 \times 9 = 5886$$

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

$$\therefore 6.54 \times 0.09 = 0.5886 \quad [4 \text{ places of decimal}]$$

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

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

$$\therefore 387 \times 125 = 48375$$

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

$$\therefore 3.87 \times 1.25 = 4.8375 \quad [4 \text{ places of decimal}]$$

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

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

$$\therefore 38 \times 6 = 228$$

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

$$\therefore 0.06 \times 0.38 = 0.0228 \quad [4 \text{ places of decimal}]$$

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

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

$$\therefore 623 \times 75 = 46725$$

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

$$\therefore 0.623 \times 0.75 = 0.46725 \quad [5 \text{ places of decimal}]$$

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

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

$$\therefore 14 \times 46 = 644$$

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

$$\therefore 0.014 \times 0.46 = 0.00644 \quad [5 \text{ places of decimal}]$$

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

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

$$\therefore 545 \times 176 = 95920$$

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

$$\begin{aligned} \therefore 54.5 \times 1.76 &= 95.920 \quad [3 \text{ places of decimal}] \\ &= 95.92 \end{aligned}$$

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

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

$$\therefore 45 \times 24 = 1080$$

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

$$\begin{aligned} \therefore 0.045 \times 2.4 &= 0.1080 \quad [4 \text{ places of decimal}] \\ &= 0.108 \end{aligned}$$

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

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

$$\therefore 1245 \times 64 = 79680$$

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

$$\begin{aligned} \therefore 1.245 \times 6.4 &= 7.9680 \quad [4 \text{ places of decimal}] \\ &= 7.968 \end{aligned}$$

Q6

Answer :

(i) First, we will find the product $13 \times 1.3 \times 0.13$.

$$\begin{aligned} \text{Now, } 13 \times 13 \times 13 &= 169 \times 13 \\ &= 2197 \end{aligned}$$

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

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

So, the product must have three decimal places.

$$\therefore 13 \times 1.3 \times 0.13 = 2.197$$

(ii) First, we will find the product $2.4 \times 1.5 \times 2.5$.

$$\begin{aligned}\text{Now, } 24 \times 15 \times 25 &= 360 \times 25 \\ &= 9000\end{aligned}$$

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

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

So, the product must have three decimal places.

$$\begin{aligned}\therefore 2.4 \times 1.5 \times 2.5 &= 9.000 \\ &= 9\end{aligned}$$

(iii) First, we will find the product $0.8 \times 3.5 \times 0.05$.

$$\begin{aligned}\text{Now, } 8 \times 35 \times 5 &= 280 \times 5 \\ &= 1400\end{aligned}$$

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

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

So, the product must have four decimal places.

$$\begin{aligned}\therefore 0.8 \times 3.5 \times 0.05 &= 0.1400 \\ &= 0.14\end{aligned}$$

(iv) First, we will find the product $0.2 \times 0.02 \times 0.002$.

$$\begin{aligned}\text{Now, } 2 \times 2 \times 2 &= 4 \times 2 \\ &= 8\end{aligned}$$

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

So, the product must have six decimal places.

$$\therefore 0.2 \times 0.02 \times 0.002 = 0.000008$$

(v) First, we will find the product $11.1 \times 1.1 \times 0.11$.

$$\begin{aligned}\text{Now, } 111 \times 11 \times 11 &= 1221 \times 11 \\ &= 13431\end{aligned}$$

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

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

So, the product must have four decimal places.

$$\therefore 11.1 \times 1.1 \times 0.11 = 1.3431$$

(vi) First, we will find the product $2.1 \times 0.21 \times 0.021$.

$$\begin{aligned}\text{Now, } 21 \times 21 \times 21 &= 441 \times 21 \\ &= 9261\end{aligned}$$

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

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

So, the product must have six decimal places.

$$\therefore 2.1 \times 0.21 \times 0.021 = 0.009261$$

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

$$\begin{aligned}\therefore \text{Weight of 45 such tins} &= (16.8 \times 45) \text{ kg} \\ &= 756 \text{ kg}\end{aligned}$$

Hence, the weight of 45 tins of oil is 756 kg.

Q11

Answer :

Weight of 1 bag of wheat = 97.8 kg

$$\begin{aligned}\therefore \text{Weight of 500 such bags} &= (97.8 \times 500) \text{ kg} \\ &= 48900 \text{ kg}\end{aligned}$$

Hence, the weight of 500 bags of wheat is 48900 kg.

Q12

Answer :

Weight of 1 bag of sugar = 48.450 kg

$$\begin{aligned}\therefore \text{Weight of 16 bags of sugar} &= (48.450 \times 16) \text{ kg} \\ &= 775.2 \text{ kg}\end{aligned}$$

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

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

Q13

Answer :

Capacity of 1 sauce bottle = 0.845 kg

$$\begin{aligned}\therefore \text{Capacity of 72 such bottles} &= (0.845 \times 72) \text{ kg} \\ &= 60.84 \text{ kg}\end{aligned}$$

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

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

$$\begin{aligned}\therefore \text{Weight of 25 such bottles} &= (0.925 \times 25) \text{ kg} \\ &= 23.125 \text{ kg}\end{aligned}$$

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

\therefore The weight of 25 bottles of jam will be 23.125 kg.

Q15

Answer :

Capacity of 1 drum of oil = 16.850 litres

$$\begin{aligned}\therefore \text{Capacity of 48 such drums} &= (16.850 \times 48) \text{ litres} \\ &= 808.800 \text{ litres}\end{aligned}$$

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

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 × 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.

Decimals

Exercise 3D

Q1

Answer :

We have the following:

(i) $131.6 \div 10 = \frac{131.6}{10} = 13.16$ [Shift the decimal point to the left by 1 place]

(ii) $32.56 \div 10 = \frac{32.56}{10} = 3.256$ [Shift the decimal point to the left by 1 place]

(iii) $4.38 \div 10 = \frac{4.38}{10} = 0.438$ [Shift the decimal point to the left by 1 place]

(iv) $0.34 \div 10 = \frac{0.34}{10} = 0.034$ [Shift the decimal point to the left by 1 place]

(v) $0.08 \div 10 = \frac{0.08}{10} = 0.008$ [Shift the decimal point to the left by 1 place]

(vi) $0.062 \div 10 = \frac{0.062}{10} = 0.0062$ [Shift the decimal point to the left by 1 place]

Q2

Answer :

We have the following:

(i) $137.2 \div 100 = \frac{137.2}{100} = 1.372$ [Shifting the decimal point to the left by 2 places]

(ii) $23.4 \div 100 = \frac{23.4}{100} = 0.234$ [Shifting the decimal point to the left by 2 places]

(iii) $4.7 \div 100 = \frac{4.7}{100} = 0.047$ [Shifting the decimal point to the left by 2 places]

(iv) $0.3 \div 100 = \frac{0.3}{100} = 0.003$ [Shifting the decimal point to the left by 2 places]

(v) $0.58 \div 100 = \frac{0.58}{100} = 0.0058$ [Shifting the decimal point to the left by 2 places]

(vi) $0.02 \div 100 = \frac{0.02}{100} = 0.0002$ [Shifting the decimal point to the left by 2 places]

Q3

Answer :

We have the following:

$$(i) 1286.5 \div 1000 = \frac{1286.5}{1000} = 1.2865 \quad [\text{Shift the decimal point to the left by 3 places}]$$

$$(ii) 354.16 \div 1000 = \frac{354.16}{1000} = 0.35416 \quad [\text{Shift the decimal point to the left by 3 places}]$$

$$(iii) 38.9 \div 1000 = \frac{38.9}{1000} = 0.0389 \quad [\text{Shift the decimal point to the left by 3 places}]$$

$$(iv) 4.6 \div 1000 = \frac{4.6}{1000} = 0.0046 \quad [\text{Shift the decimal point to the left by 3 places}]$$

$$(v) 0.8 \div 1000 = \frac{0.8}{1000} = 0.0008 \quad [\text{Shift the decimal point to the left by 3 places}]$$

$$(vi) 2 \div 1000 = \frac{2}{1000} = 0.002 \quad [\text{Shift the decimal point to the left by 3 places}]$$

Q4

Answer :

$$(i) 12 \div 8 = \frac{12}{8} = \frac{3}{2}$$
$$\begin{array}{r} 2 \overline{) 3} 1.5 \\ \underline{-2} \\ 10 \\ \underline{-10} \\ \times \end{array}$$

$$\therefore 12 \div 8 = 1.5$$

$$(ii) 63 \div 15 = \frac{63}{15} = \frac{21}{5}$$
$$\begin{array}{r} 5 \overline{) 21} 4.2 \\ \underline{20} \\ 10 \\ \underline{-10} \\ \times \end{array}$$

$$\therefore 63 \div 15 = 4.2$$

$$(iii) 47 \div 20 = \frac{47}{20}$$
$$\begin{array}{r} 20 \overline{) 47} 2.35 \\ \underline{40} \\ 70 \\ \underline{-60} \\ 100 \\ \underline{-100} \\ \times \end{array}$$
$$\therefore 47 \div 20 = 2.35$$

$$(iv) 101 \div 25 = \frac{101}{25}$$
$$\begin{array}{r} 25 \overline{) 101} 4.04 \\ \underline{100} \\ 100 \\ \underline{-100} \\ \times \end{array}$$
$$\therefore 101 \div 25 = 4.04$$

$$(v) 31 \div 40$$
$$\begin{array}{r} 0.775 \\ 40 \overline{) 3100} \leftarrow \text{two zero annexed} \\ \underline{-0} \\ 31 \\ \underline{-28} \\ 30 \\ \underline{-28} \\ 20 \\ \underline{-20} \\ \times \end{array}$$

$$\therefore 31 \div 40 = 0.775$$

$$(vi) 11 \div 16 = \frac{11}{16}$$

$$\begin{array}{r} 0.6875 \\ 16 \overline{) 110000} \leftarrow \text{four zero annexed} \\ \underline{-00} \\ 110 \\ \underline{-96} \\ 140 \\ \underline{-128} \\ 120 \\ \underline{-112} \\ 80 \\ \underline{-80} \\ \times \end{array}$$

$$\therefore 11 \div 16 = 0.6875$$

Q5

Answer :

(i) We have:

$$\begin{array}{r} 43.2 \div 6 \\ 6 \overline{) 43.2} (7.2 \\ \underline{-42} \\ 12 \\ \underline{-12} \\ \times \end{array}$$

$$\therefore 43.2 \div 6 = 7.2$$

(ii) We have:

$$\begin{array}{r} 60.48 \div 12 \\ 12 \overline{) 60.48} (5.04 \\ \underline{-60} \\ 04 \\ \underline{-0} \\ 48 \\ \underline{-48} \\ \times \end{array}$$

$$\therefore 60.48 \div 12 = 5.04$$

(iii) We have:

$$\begin{array}{r} 117.6 \div 21 \\ 21 \overline{) 1176} (5.6 \\ \underline{-105} \\ 126 \\ \underline{-126} \\ \times \end{array}$$

$$\therefore 117.6 \div 21 = 5.6$$

(iv) We have:

$$\begin{array}{r} 217.44 \div 18 \\ 18 \overline{) 217.44} (12.08 \\ \underline{-18} \\ 37 \\ \underline{-36} \\ 144 \\ \underline{-144} \\ \times \end{array}$$

$$\therefore 217.44 \div 18 = 12.08$$

(v) We have:

$$\begin{array}{r} 2.575 \div 25 \\ 25 \overline{)2.575} (0.103 \\ \underline{-0} \\ 25 \\ \underline{-25} \\ \times 7 \\ \underline{-0} \\ 75 \\ \underline{-75} \\ \times \end{array}$$

$\therefore 2.575 \div 25 = 0.103$

(vi) We have:

$$\begin{array}{r} 6.08 \div 8 \\ 8 \overline{)6.08} (0.76 \\ \underline{-0} \\ 60 \\ \underline{-56} \\ 48 \\ \underline{-48} \\ \times \end{array}$$

$\therefore 6.08 \div 8 = 0.76$

(vii) We have:

$$\begin{array}{r} 0.765 \div 9 \\ 9 \overline{)0.765} (0.085 \\ \underline{-0} \\ 076 \\ \underline{-72} \\ 45 \\ \underline{-45} \\ \times \end{array}$$

$\therefore 0.765 \div 9 = 0.085$

(viii) We have:

$$\begin{array}{r} 0.768 \div 16 \\ 16 \overline{)0.768} (0.048 \\ \underline{-0} \\ \times 76 \\ \underline{-64} \\ 128 \\ \underline{-128} \\ \times \end{array}$$

$\therefore 0.768 \div 16 = 0.048$

(ix) We have:

$$\begin{aligned} & 0.175 \div 25 \\ &= \frac{0.175}{25} \\ &= \frac{0.175 \times 1000}{25 \times 1000} \\ &= \frac{175}{25 \times 1000} \\ &= \frac{7}{1000} \\ &= 0.007 \end{aligned}$$

(x) We have:

$$\begin{array}{r} 0.3322 \div 11 \\ 11 \overline{)0.3322} (0.0302 \\ \underline{-0} \\ \times 3 \\ \underline{-0} \\ 33 \\ \underline{-33} \\ \times 2 \\ \underline{-0} \\ 22 \\ \underline{-22} \\ \times \end{array}$$

$\therefore 0.3322 \div 11 = 0.0302$

(xi) We have:

$$2.13 \div 15$$

$$\begin{array}{r} 0.142 \\ 15 \overline{) 2.130} \leftarrow \text{one zero annexed} \\ \underline{-0} \\ 21 \\ \underline{-15} \\ 63 \\ \underline{-60} \\ 30 \\ \underline{-30} \\ \times \end{array}$$

$$\therefore 2.13 \div 15 = 0.142$$

(xii) We have:

$$6.54 \div 12$$

$$\begin{array}{r} 0.545 \\ 12 \overline{) 6.540} \leftarrow \text{one zero annexed} \\ \underline{-0} \\ 65 \\ \underline{-60} \\ 54 \\ \underline{-48} \\ 60 \\ \underline{-60} \\ \times \end{array}$$

$$\therefore 6.54 \div 12 = 0.545$$

(xiii) We have:

$$5.52 \div 16$$

$$\begin{array}{r} 0.345 \\ 16 \overline{) 5.520} \leftarrow \text{one zero annexed} \\ \underline{-0} \\ 55 \\ \underline{-48} \\ 72 \\ \underline{-64} \\ 80 \\ \underline{-80} \\ \times \end{array}$$

$$\therefore 5.52 \div 16 = 0.345$$

(xiv) We have:

$$1.001 \div 14$$

$$\begin{array}{r} 0.0715 \\ 14 \overline{) 1.0010} \leftarrow \text{one zero annexed} \\ \underline{-0} \\ 100 \\ \underline{-98} \\ 21 \\ \underline{-14} \\ 70 \\ \underline{-70} \\ \times \end{array}$$

$$\therefore 1.001 \div 14 = 0.0715$$

(xv) We have:

$$0.477 \div 18$$

$$\begin{array}{r} 0.0265 \\ 18 \overline{) 0.4770} \leftarrow \text{one zero annexed} \\ \underline{-0} \\ \times 4 \\ \underline{-0} \\ 47 \\ \underline{-36} \\ 117 \\ \underline{-108} \\ 90 \\ \underline{-90} \\ \times \end{array}$$

$$\therefore 0.477 \div 18 = 0.0265$$

Answer :

$$(i) 16.46 \div 20 = \frac{16.46}{20} = \frac{16.46 \times 100}{20 \times 100} = \frac{1646}{2 \times 1000} = \frac{823}{1000} = 0.823$$

$$(ii) 403.8 \div 30 = \frac{403.8}{30} = \frac{403.8 \times 10}{30 \times 10} = \frac{4038}{3 \times 100} = \frac{1346}{100} = 13.46$$

$$(iii) 19.2 \div 80 = \frac{19.2}{80} = \frac{19.2 \times 10}{80 \times 10} = \frac{192}{800} = \frac{192}{8 \times 100} = \frac{24}{100} = 0.24$$

$$(iv) 156.8 \div 200 = \frac{156.8}{200} = \frac{156.8 \times 10}{200 \times 10} = \frac{1568}{2000} = \frac{784}{1000} = 0.784$$

$$(v) 12.8 \div 500 = \frac{12.8}{500} = \frac{12.8 \times 10}{500 \times 10} = \frac{128}{5000} = \frac{25.6}{1000} = 0.0256$$

$$(vi) 18.08 \div 400 = \frac{18.08}{400} = \frac{18.08 \times 100}{400 \times 100} = \frac{1808}{40000} = \frac{452}{10000} = 0.0452$$

Q7

Answer :

$$(i) 3.28 \div 0.8 = \frac{3.28}{0.8} = \frac{3.28 \times 10}{0.8 \times 10} = \frac{32.8}{8}$$

Now, we have:

$$\begin{array}{r} 8 \overline{)32.8} (4.1 \\ \underline{-32} \\ \times 8 \\ \underline{-8} \\ \times \\ \hline \therefore \frac{3.28}{0.8} = \frac{32.8}{8} = 4.1 \end{array}$$

$$(ii) 0.288 \div 0.9 = \frac{0.288}{0.9} = \frac{0.288 \times 10}{0.9 \times 10} = \frac{2.88}{9}$$

Now, we have:

$$\begin{array}{r} 9 \overline{)2.88} (0.32 \\ \underline{-0} \\ 28 \\ \underline{-27} \\ 18 \\ \underline{-18} \\ \times \\ \hline \therefore \frac{0.288}{0.9} = \frac{2.88}{9} = 0.32 \end{array}$$

$$(iii) 25.395 \div 1.5 = \frac{25.395}{1.5} = \frac{25.395 \times 10}{1.5 \times 10} = \frac{253.95}{15}$$

Now, we have:

$$\begin{array}{r} 15 \overline{)253.95} (16.93 \\ \underline{-15} \\ 103 \\ \underline{-90} \\ 139 \\ \underline{-135} \\ 45 \\ \underline{-45} \\ \times \\ \hline \therefore \frac{25.395}{1.5} = \frac{253.95}{15} = 16.93 \end{array}$$

$$(iv) 2.0484 \div 0.18 = \frac{2.0484}{0.18} = \frac{2.0484 \times 100}{0.18 \times 100} = \frac{204.84}{18}$$

Now, we have:

$$\begin{array}{r} 18 \overline{)204.84} (11.38 \\ \underline{-18} \\ 24 \\ \underline{-18} \\ 68 \\ \underline{-54} \\ 144 \\ \underline{-144} \\ \times \\ \hline \therefore \frac{2.0484}{0.18} = \frac{204.84}{18} = 11.38 \end{array}$$

$$(v) 0.228 \div 0.38 = \frac{0.228}{0.38} = \frac{0.228 \times 100}{0.38 \times 100} = \frac{22.8}{38}$$

Now, we have:

$$\begin{array}{r} 38 \overline{)22.8} (0.6 \\ \underline{-0} \\ 228 \\ \underline{-228} \\ \times \\ \hline \therefore \frac{0.228}{0.38} = \frac{22.8}{38} = 0.6 \end{array}$$

$$(vi) 0.8085 \div 0.35 = \frac{0.8085}{0.35} = \frac{0.8085 \times 100}{0.35 \times 100} = \frac{80.85}{35}$$

Now, we have:

$$\begin{array}{r} 35 \overline{)80.85} (2.31 \\ \underline{-70} \\ 108 \\ \underline{-105} \\ 35 \\ \underline{-35} \\ \times \\ \hline \therefore \frac{0.8085}{0.35} = \frac{80.85}{35} = 2.31 \end{array}$$

$$(vii) 21.976 \div 1.64 = \frac{21.976}{1.64} = \frac{21.976 \times 100}{1.64 \times 100} = \frac{2197.6}{164}$$

Now, we have:

$$\begin{array}{r} 164 \overline{)2197.6} (13.4 \\ \underline{-164} \\ 557 \\ \underline{-492} \\ 656 \\ \underline{-656} \\ \times \\ \hline \therefore \frac{21.976}{1.64} = \frac{2197.6}{164} = 13.4 \end{array}$$

$$(viii) 11.04 \div 1.6 = \frac{11.04}{1.6} = \frac{11.04 \times 10}{1.6 \times 10} = \frac{110.4}{16}$$

Now, we have:

$$\begin{array}{r} 16 \overline{)110.4} (6.9 \\ \underline{-96} \\ 144 \\ \underline{-144} \\ \times \\ \hline \therefore \frac{11.04}{1.6} = \frac{110.4}{16} = 6.9 \end{array}$$

$$(ix) 6.612 \div 11.6 = \frac{6.612}{11.6} = \frac{6.612 \times 10}{11.6 \times 10} = \frac{66.12}{116}$$

Now, we have:

$$\begin{array}{r} 116 \overline{)66.12} (0.57 \\ \underline{-0} \\ 661 \\ \underline{-580} \\ 812 \\ \underline{-812} \\ \times \\ \hline \therefore \frac{6.612}{11.6} = \frac{66.12}{116} = 0.57 \end{array}$$

$$(x) 0.076 \div 0.19 = \frac{0.076}{0.19} = \frac{0.076 \times 100}{0.19 \times 100} = \frac{7.6}{19}$$

Now, we have:

$$\begin{array}{r} 19 \overline{) 7.6} (0.4 \\ \underline{-0} \\ 76 \\ \underline{-76} \\ \times \end{array}$$

$$\therefore \frac{0.076}{0.19} = \frac{7.6}{19} = 0.4$$

$$(xi) 48 \div 0.074$$

$$\begin{aligned} &= \frac{48}{0.074} \\ &= \frac{48 \times 1000}{0.074 \times 1000} \\ &= \frac{48000}{74} \\ &= 2 \times 1000 \\ &= 2000 \end{aligned}$$

$$(xii) 16.578 \div 5.4 = \frac{16.578}{5.4} = \frac{16.578 \times 10}{5.4 \times 10} = \frac{165.78}{54}$$

Now, we have:

$$\begin{array}{r} 54 \overline{) 165.78} (3.07 \\ \underline{-162} \\ 37 \\ \underline{-0} \\ 378 \\ \underline{-378} \\ \times \end{array}$$

$$\therefore \frac{16.578}{5.4} = \frac{165.78}{54} = 3.07$$

$$(xiii) 28 \div 0.56$$

$$\begin{aligned} &= \frac{28}{0.56} \\ &= \frac{28 \times 100}{0.56 \times 100} \\ &= \frac{2800}{56} \\ &= \frac{1 \times 100}{2} \\ &= 50 \end{aligned}$$

$$(xv) 3 \div 80 = \frac{3}{80}$$

Now, we have:

$$\begin{array}{r} 0.0375 \\ 80 \overline{) 30000} \leftarrow \text{four zero annexed} \\ \underline{-0} \\ 30 \\ \underline{-0} \\ 300 \\ \underline{-240} \\ 600 \\ \underline{-560} \\ 400 \\ \underline{-400} \\ \times \end{array}$$

$$\therefore \frac{3}{80} = 0.0375$$

Q9

Answer :

Cloth required for 1 shirt = 1.8 m

$$\therefore \text{Number of shirts that can be made from 45 m of cloth} = \frac{45}{1.8} = \frac{15}{0.6} = \frac{5}{0.2} = \frac{50}{2} = 25$$

Hence, 25 shirts can be made from a piece of cloth of length 45 m.

Q10

Answer :

Distance covered by the car with 2.4 litres of petrol = 22.8 km

$$\begin{aligned}\therefore \text{Distance covered with 1 litre of petrol} &= \left(\frac{22.8}{2.4}\right) \text{ km} \\ &= \left(\frac{228}{24}\right) \text{ km} = \left(\frac{228 \div 12}{24 \div 12}\right) \text{ km} = \left(\frac{19}{2}\right) \text{ km} = 9\frac{1}{2} \text{ km}\end{aligned}$$

Hence, the distance covered by the car with 1 litre of petrol is $9\frac{1}{2}$ km.

Q11

Answer :

Capacity of 1 tin of oil = 16.5 litres

$$\therefore \text{Number of tins required to hold 478.5 litres of oil} = \left(\frac{478.5}{16.5}\right) = \left(\frac{4785}{165}\right) = \left(\frac{4785 \div 15}{165 \div 15}\right) = \frac{319}{11} = 29$$

Hence, 29 oil tins will be required to hold 478.5 litres of oil.

Q12

Answer :

Weight of 37 bags of sugar = 3644.5 kg

$$\therefore \text{Weight of 1 bag of sugar} = \left(\frac{3644.5}{37}\right) = 98.5 \text{ kg}$$

$$\begin{array}{r} 37 \overline{)3644.5} \quad (98.5 \\ \underline{-333} \\ 314 \\ \underline{-296} \\ 185 \\ \underline{-185} \\ \times \end{array}$$

Hence, each bag of sugar weighs 98.5 kg.

Q13

Answer :

Capacity of 69 buckets of water = 586.5 litres

$$\therefore \text{Capacity of one such bucket} = \left(\frac{586.5}{69}\right) \text{ litres} = 8.5 \text{ litres.}$$

$$\begin{array}{r} 69 \overline{)586.5} \quad (8.5 \\ \underline{-552} \\ 345 \\ \underline{-345} \\ \times \end{array}$$

Hence, the capacity of each water bucket is 8.5 litres.

Q14

Answer :

Length of one piece of cloth = 1.15 m

$$\begin{aligned}\therefore \text{Number of pieces she gets from 46 m of cloth} &= \left(\frac{46}{1.15}\right) \\ &= \left(\frac{46 \times 100}{1.15 \times 100}\right) = \left(\frac{4600}{115}\right) = 40\end{aligned}$$

Hence, Monica has 40 pieces of cloth each of length 1.15 m.

Q15

Answer :

Total weight of all the bags of cement = 1792.8 kg

Weight of each bag = 49.8 kg

$$\begin{aligned}\text{Number of bags} &= \left(\frac{\text{Total weight}}{\text{Weight of each bag}}\right) \\ &= \left(\frac{1792.8}{49.8}\right) = \left(\frac{17928}{498}\right) = 36\end{aligned}$$

$$\begin{array}{r} 498 \overline{)17928} \quad (36 \\ \underline{-1494} \\ 2988 \\ \underline{-2988} \\ \times \end{array}$$

Hence, Mr. Soni bought 36 bags of cement.

Q16

Answer :

Thickness of the pile of plywood pieces = 1.89 m = 189 cm

Thickness of one piece of plywood = 0.35 cm

$$\therefore \text{Required number of plywood pieces} = \left(\frac{189}{0.35} \right) = \left(\frac{189 \times 100}{0.35 \times 100} \right) = \left(\frac{18900}{35} \right) = 540$$

$$\begin{array}{r} 35 \overline{)18900} 540 \\ \underline{-175} \\ 140 \\ \underline{-140} \\ 0000 \\ \underline{-0000} \\ \times \end{array}$$

Hence, 540 pieces of plywood are required to make a pile of height 1.89 m.

Q17

Answer :

Product of the given decimals = 261.36

One decimal = 17.6

The other decimal = $261.36 \div 17.6$

$$= \left(\frac{261.36}{17.6} \right) = \left(\frac{261.36 \times 10}{17.6 \times 10} \right) = \left(\frac{2613.6}{176} \right) \\ = 14.85$$

$$\begin{array}{r} 176 \overline{)2613.6} 14.85 \\ \underline{-176} \\ 853 \\ \underline{-704} \\ 1496 \\ \underline{-1408} \\ 880 \\ \underline{-880} \\ \times \end{array}$$

Hence, the other decimal is 14.85.

Decimals

Exercise 3E

Q1

Answer :

(b) $\frac{3}{50}$

$$0.06 = \frac{6}{100} = \frac{3}{50}$$

Q2

Answer :

(c) $1\frac{1}{25}$

$$1.04 = \frac{104}{100} = \frac{26}{25} = 1\frac{1}{25}$$

Q3

Answer :

(b) 2.08

$$2\frac{2}{25} = \frac{52}{25}$$

On dividing, we get:

$$\begin{array}{r} 25 \overline{) 52} 2.08 \\ \underline{-50} \\ 200 \\ \underline{-200} \\ 0 \end{array}$$

$$\therefore 2\frac{2}{25} = \frac{52}{25} = 2.08$$

Q4

Answer :

(c) 0.00006 km

$$6 \text{ cm} = \frac{6}{100} \text{ m} = 0.06 \text{ m}$$

$$0.06 \text{ m} = \frac{0.06}{1000} \text{ km} = 0.00006 \text{ km}$$

$$\therefore 6 \text{ cm} = 0.00006 \text{ km}$$

Q5

Answer :

(b) 0.07 kg

$$70 \text{ g} = \frac{70}{1000} \text{ kg} = \frac{7}{100} \text{ kg}$$

$$= 0.07 \text{ kg}$$

$$\therefore 70 \text{ g} = 0.07 \text{ kg}$$

Q6

Answer :

(c) 5.006 kg

$$5 \text{ kg } 6 \text{ g} = (5 \times 1000) \text{ g} + 6 \text{ g} = 5006 \text{ g}$$

$$= \frac{5006}{1000} \text{ kg} = 5.006 \text{ kg}$$

$$\therefore 5 \text{ kg } 6 \text{ g} = 5.006 \text{ kg}$$

Q7

Answer :

(c) 2.005 km

$$2 \text{ km } 5 \text{ m} = (2 \times 1000) \text{ m} + 5 \text{ m} = 2005 \text{ m}$$

$$= \frac{2005}{1000} \text{ km} = 2.005 \text{ km}$$

$$\therefore 2 \text{ km } 5 \text{ m} = 2.005 \text{ km}$$

Q8

Answer :

(c) 0.307

Converting the given decimals into like decimals, we get:

1.007 and 0.700

Writing them in column form with the larger one at the top and subtracting, we get:

$$\begin{array}{r} 1.007 \\ -0.700 \\ \hline 0.307 \end{array}$$

Hence, the required number is 0.307.

Q9

Answer :

(b) .07

We have:

$$0.1 - x = 0.03$$

$$\Rightarrow x = 0.1 - 0.03$$

Converting the given decimals into like decimals, we get:

0.10 and 0.03

Writing them in column form with the larger one at the top and subtracting, we get:

$$\begin{array}{r} 0.10 \\ -0.03 \\ \hline 0.07 \end{array}$$

$$\therefore x = 0.07$$

Hence, the required number is 0.07.

Q10

Answer :

(c) .43

We have:

$$3.07 + x = 3.5$$

$$\Rightarrow x = 3.5 - 3.07$$

Converting the given decimals into like decimals, we get:

3.07 and 3.50

Writing them in column form with the larger one at the top and subtracting, we get:

$$\begin{array}{r} 3.50 \\ -3.07 \\ \hline 0.43 \end{array}$$

$$\therefore x = 0.43$$

Hence, 0.43 should be added to 3.07 to get 3.5.

Q11

Answer :

(c) 0.069

First, we will multiply 23 by 3.

$$\text{i.e., } 23 \times 3 = 69$$

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

$$\therefore 0.23 \times 0.3 = 0.069 \quad (3 \text{ places of decimal})$$

Q12

Answer :

(b) 0.6

We have:

$$2 \times 30 = 60$$

$$\therefore 0.02 \times 30 = 0.60 \quad (2 \text{ places of decimal})$$
$$= 0.6$$

Q13

Answer :

(b) 0.2

First, we will multiply 25 by 8.

$$\therefore 25 \times 8 = 200$$

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

$$\therefore 0.25 \times 0.8 = 0.200 \quad [3 \text{ places of decimal}]$$
$$= 0.2$$

Q14

Answer :

(c) .064

First, we will find the product $4 \times 4 \times 4 = 64$

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

$$\therefore 0.4 \times 0.4 \times 0.4 = 0.064 \quad (3 \text{ places of decimal})$$

Q15

Answer :

(b) .0011

First, we will find the product $11 \times 1 \times 1$.

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

$\therefore 1.1 \times 0.1 \times 0.01 = 0.0011$ (4 places of decimal)

Q16

Answer :

(a) 13

$$2.08 \div 0.16 = \frac{2.08}{0.16} = \frac{2.08 \times 100}{0.16 \times 100} = \frac{208}{16} = 13$$

Q17

Answer :

(b) 0.17

$$1.02 \div 6 = \frac{1.02}{6} = \frac{1.02 \times 100}{6 \times 100} = \frac{102}{6 \times 100} = \frac{17}{100} = 0.17$$

Q18

Answer :

(a) 44.2

$$30.94 \div 0.7 = \frac{30.94}{0.7} = \frac{30.94 \times 100}{0.7 \times 100} = \frac{3094}{70} = 44.2$$

Q19

Answer :

(b) 2.1

$$2.73 \div 1.3 = \frac{2.73}{1.3} = \frac{2.73 \times 100}{1.3 \times 100} = \frac{273}{13 \times 10} = \frac{21}{10} = 2.1$$

Q20

Answer :

(a) 40.5

$$89.1 \div 2.2 = \frac{89.1}{2.2} = \frac{89.1 \times 10}{2.2 \times 10} = \frac{891}{22} = 40.5$$

Q21

Answer :

(c) 0.025

First, we will multiply 5 by 5.

i.e., $5 \times 5 = 25$

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

$\therefore 0.5 \times 0.05 = 0.025$ (3 places of decimal)