*** Answer The Following Questions In One Sentence.[1 Marks Each]** [29]

1. Recall that a tenth is 0.1, a hundredth is 0.01, and so on. Find the following product in tenths, hundredths, and so on:

   Ans. : Here, 6 × 4 tenths = 24 tenths.

2. Recall that a tenth is 0.1, a hundredth is 0.01, and so on. Find the following product in tenths, hundredths, and so on:
   7 × 0.3

   Ans. : 7 × 0.3 = 7 × 3 tenths = 21 tenths

3. Recall that a tenth is 0.1, a hundredth is 0.01, and so on. Find the following product in tenths, hundredths, and so on:
   9 × 5 hundredths

   Ans. : Here, 9 × 5 hundredths = 45 hundredths

4. Find the product:
   27.34 × 6

   Ans. :

$$\text{Here, } 27.34 \times 6 = \frac{2734}{100} \times 6 = \frac{16404}{100}$$

$$= 164.04 \quad \text{(2 decimals)}$$

5. Find the product:
   4.23 × 3.7

   Ans. :

$$\underset{\text{(2 decimals)}}{4.23} \times \underset{\text{(1 decimal)}}{3.7} = \frac{423 \times 37}{100 \times 10}$$

$$= \frac{15651}{1000} = \underset{\text{(3 decimals)}}{15.651}$$

6. Find the product:
   0.432 × 0.23

   Ans. :

$$\text{We have } \underset{\text{(3 decimals)}}{0.432} \times \underset{\text{(2 decimals)}}{0.23} = \frac{9936}{1000 \times 100}$$

$$= \underset{\text{(5 decimals)}}{0.09936}$$

7. Thejus needs 1.65 m of cloth for a shirt. How many metres of cloth are needed for 3 shirts?

Ans. : Given: Thejus needs 1.65 m of cloth for a shirt.
For 3 shirts, the total cloth needed = 1.65 × 3

$= \frac{165}{100} \times 3$

$= \frac{495}{100}$

= 4.95

8. What is the quotient?
132 ÷ 4 = _____

Ans. : $\frac{132}{4}$

$$\begin{array}{r} \text{T O} \\ 4\overline{)\,132\,(} \; 3\;3 \\ -12 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

∴ Quotient = 33

9. What is the quotient?
13.2 ÷ 4 =_____

Ans. : $\frac{13.2}{4} = \frac{132}{40}$

$$\begin{array}{r} \text{O}\;\;\text{T}^{\text{th}} \\ 40\overline{)\,132\,(} \; 3\,.\,3 \\ -120 \\ \hline 120 \\ -120 \\ \hline 0 \end{array}$$

∴ Quotient = 3.3

10. What is the quotient?
1.32 ÷ 4 =_____

Ans. : Here $\frac{1.32}{4} = \frac{132}{400}$

$$\begin{array}{r} \text{O}\;\;\text{T}^{\text{th}}\;\text{H}^{\text{th}} \\ 400\overline{)\,1320\,(} \; 0\,.\,3\;\;3 \\ -1200 \\ \hline 1200 \\ -1200 \\ \hline 0 \end{array}$$

∴ Quotient = 0.33

11. What is the quotient?
0.132 ÷ 4 =_____

Ans. : Here $\frac{0.132}{4} = \frac{132}{4000}$

$$
\begin{array}{r|l}
4000 & 132000 \\
 & -12000 \\
\hline
 & 12000 \\
 & -12000 \\
\hline
 & 0
\end{array}
\qquad
\begin{array}{l}
\text{O} \;\; \text{T}^{\text{th}} \;\; \text{H}^{\text{th}} \;\; \text{Th}^{\text{th}} \\
0 \;.\; 0 \;\; 3 \;\; 3
\end{array}
$$

∴ Quotient = 0.033

12. What is the quotient?

126 ÷ 8 = _____

Ans. : $\frac{126}{8}$

$$
\begin{array}{r|l}
8 & 126 \\
 & -8 \\
\hline
 & 46 \\
 & -40 \\
\hline
 & 60 \\
 & -56 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & 0
\end{array}
\qquad
\begin{array}{l}
\text{T} \;\; \text{O} \;\; \text{T}^{\text{th}} \;\; \text{H}^{\text{th}} \\
1 \;\; 5 \;.\; 7 \;\; 5
\end{array}
$$

Hence quotient = 15.75

13. What is the quotient?

12.6 ÷ 8 = _____

Ans. : $\frac{12.6}{8}$

$$
\begin{array}{r|l}
8 & 12.6 \\
 & -8 \\
\hline
 & 46 \\
 & -40 \\
\hline
 & 60 \\
 & -56 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & 0
\end{array}
\qquad
\begin{array}{l}
\text{T} \;\; \text{O} \;\; \text{T}^{\text{th}} \;\; \text{H}^{\text{th}} \\
1.5 \;\; 7 \;\; 5
\end{array}
$$

Hence quotient = 1.575

14. What is the quotient?

1.26 ÷ 8 = _____

Ans. : Here 1.26 ÷ 8

$$
\begin{array}{r|l}
8 & 1.26 \\
 & -0 \\
\hline
 & 12 \\
 & -8 \\
\hline
 & 46 \\
 & -40 \\
\hline
 & 60 \\
 & -56 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & 0
\end{array}
\qquad
\begin{array}{l}
\text{O T}^{\text{th}}\ \text{H}^{\text{th}}\ \text{Th}^{\text{th}}\ \text{TTh}^{\text{th}} \\
0.1\ \ 5\ \ 7\ \ 5
\end{array}
$$

Hence quotient = 0.1575

15. What is the quotient?
0.126 ÷ 8 = _____

Ans. : Here 0.126 ÷ 8

$$
\begin{array}{r|l}
8 & 0.126 \\
 & -0 \\
\hline
 & 12 \\
 & -8 \\
\hline
 & 46 \\
 & -40 \\
\hline
 & 60 \\
 & -56 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & 0
\end{array}
\qquad
\begin{array}{l}
\text{O T}^{\text{th}}\ \text{H}^{\text{th}}\ \text{T}^{\text{th}}\ \text{Th}^{\text{th}} \\
0.01\ 5\ 7\ \ 5
\end{array}
$$

Hence quotient = 0.01575

16. What is the quotient?
0.0126 ÷ 8 = _____

Ans. : Here 0.0126 ÷ 8

$$
\begin{array}{r|l}
8 & 0.0126 \\
 & 0 \\
\hline
 & 00 \\
 & 00 \\
\hline
 & 12 \\
 & -8 \\
\hline
 & 46 \\
 & -40 \\
\hline
 & 60 \\
 & -56 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & 0
\end{array}
\qquad 0.001575
$$

Hence quotient = 0.001575

17. Express the following fractions in decimal form:

$\frac{2}{5}$

Ans. : $\frac{2}{5}$

Multiply both the Nr and Dr by 2.

$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$

Now, put decimal $\frac{4}{10} = 0.4$

Hence $\frac{2}{5}$ in decimal form is 0.4.

18. Express the following fractions in decimal form:

$\frac{13}{4}$

Ans. : $\frac{13}{4}$

Multiply both the Nr and Dr by 25.

$\frac{13}{4} \times \frac{25}{25} = \frac{325}{100}$

Now, put a decimal

$\frac{325}{100} = 3.25$

Hence $\frac{13}{4}$ in decimal form is 3.25.

19. Express the following fractions in decimal form:

$\frac{4}{50}$

Ans. : $\frac{4}{50}$

Multiply both the Nr and Dr by 2.

$\frac{4}{50} \times \frac{2}{2} = \frac{8}{100}$

Now, put the decimal

$\frac{8}{100} = 0.08$

Hence $\frac{4}{50}$ in decimal form is 0.08.

20. Express the following fractions in decimal form:

$\frac{5}{8}$

Ans. : $\frac{5}{8}$

Multiply both the Nr and Dr by 125.

$\frac{5}{8} \times \frac{125}{125} = \frac{625}{1000}$

Now, put the decimal

$\frac{625}{1000} = 0.625$

Hence $\frac{5}{8}$ in decimal form is 0.625.

21. Evaluate the following using the information 156 × 12 = 1872.

(a) 15.6 × 1.2 = _____

(b) 187.2 ÷ 1.2 = _____

(c) 18.72 ÷ 15.6 = _____

(d) 0.156 × 0.12 = _____

Ans. : Given 156 × 12 = 1872 .....(i)

$\Rightarrow = \frac{1872}{12}$ .....(ii)

$\Rightarrow 12 = \frac{1872}{156}$ .....(iii)

(a) Now converting division into a fraction

$15.6 \times 1.2 = = \frac{156 \times 12}{10 \times 10} = \frac{1872}{100} = 18.72$ [using (i)]

(b) Converting division into a fraction 187.2 ÷ 1.2

$187.2 \div 1.2 = \frac{187.2}{1.2} = \frac{1872}{12} = 156$ [using (ii)]

(c) Converting division into a fraction 18.72 ÷ 15.6, we get

$18.72 \div 15.6 = \frac{18.72}{15.6} = \frac{1872 \times 10}{156 \times 100} = \frac{12}{10} = 1.2$ [Using (iii)]

(d) Here $0.156 \times 0.12 = \frac{156 \times 12}{1000 \times 100}$ [Using (i)]

$= \frac{1872}{1000 \times 100}$

= 0.01872

22. Evaluate the following:

25 ÷ _____ = 0.025

Ans. :

Let $25 \div x = 0.025$

$$\frac{25}{0.025} = x \Rightarrow x = \frac{25 \times 1000}{25} = 1000$$

23. Evaluate the following:

25 ÷ ____ = 250

Ans. :

$25 \div x = 250$

$$\Rightarrow x = \frac{25}{250} = \frac{1}{10} = 0.1$$

24. Evaluate the following:

25 ÷ _____= 2.5

Ans. :

$25 \div x = 2.5$

$$\Rightarrow x = \frac{25}{2.5} = \frac{25 \times 10}{25} = 1 \times 10 = 10$$

25. Evaluate the following:

25 ÷ 10 = 25 × _____

Ans. :

Let $25 \div 10 = 25 \times x$

$$\frac{25}{10} = 25 \times x \Rightarrow x = \frac{25}{10 \times 25} = \frac{1}{10} = 0.1$$

26. Evaluate the following:
25 ÷ 0.10 = 25 × _____

Ans. :

Let $25 \div 0.10 = 25 \times x$

$$\Rightarrow \frac{25}{0.10 \times 25} = x \Rightarrow x = \frac{1}{0.10} = \frac{100}{10} = 10$$

27. Evaluate the following:
25 ÷ 0.01 = 25 × _____

Ans. :

Let $25 \div 0.01 = 25 \times x$

$$x = \frac{25}{0.01 \times 25} = x \Rightarrow x = \frac{1}{0.01} = \frac{100}{1} = 100.$$

28. Fill the blanks in at least 2 different ways:
_____ x _____= 2.4

Ans. : Here 1.2 × 2 = 2.4 and 0.4 × 6 = 2.4

29. Fill the blanks in at least 2 different ways:
_____ x_____=14.5

Ans. : Here 2.9 × 5 = 14.5 and 14.5 × 1 = 14.5

*** Questions With Calculation.[2 Marks Each]** **[12]**

30. Dwarakanath purchases notebooks at a wholesale price of ₹ 23.6 per piece and sells each notebook at ₹ 30/-. How much profit does he make if he sells 50 books in a week?

Ans. : Profit per notebook = Selling price – wholesale price
= 30 – 23.6
= ₹ 6.4
Total profit = Profit per notebook × No. of notebooks
= 6.4 × 50
= ₹ 320

31. Choose the correct answer: $\frac{1526}{4} =$ _____
(i) 38.15 (ii) 380.15 (iii) 381.5 (iv) 381.05

Ans. : $\frac{1526}{4}$
By using the Long Division Method:

$$
\begin{array}{r|l}
4 & 1526 \\
-12 & \\
\hline
32 & \\
-32 & \\
\hline
06 & \\
-4 & \\
\hline
20 & \\
-20 & \\
\hline
0 &
\end{array}
\quad
\begin{array}{l}
\text{H T O } T^{th} \\
3\ 8\ 1.5
\end{array}
$$

Hence, option (iii) is correct.

32. Choose the correct answer: $\frac{3567}{8}$ = _____

(i) 4458.75 (ii) 44.5875 (iii) 445.875 (iv) 4458.75

Ans. : Given $\frac{3567}{8}$

By using the Long Division Method:

$$
\begin{array}{r|l}
8 & 3567 \\
-32 & \\
\hline
36 & \\
-32 & \\
\hline
47 & \\
-40 & \\
\hline
70 & \\
-64 & \\
\hline
60 & \\
-56 & \\
\hline
40 & \\
-40 & \\
\hline
0 &
\end{array}
\quad
\begin{array}{l}
\text{H T O } T^{th} H^{th} Th^{th} \\
4\ 4\ 5.8\ 7\ 5
\end{array}
$$

Hence, option (iii) is correct.

33. Find the quotient:

24.86 ÷ 1.2

Ans. : Converting division into a fraction, we get

$\frac{24.86}{1.2} = \frac{2486 \times 10}{12 \times 100} = \frac{2486}{120}$

Now

$$
\begin{array}{r|l}
120 & 2486 \\
-240 & \\
\hline
860 & \\
-840 & \\
\hline
200 & \\
-120 & \\
\hline
800 & \\
-720 & \\
\hline
80 &
\end{array}
\quad
20.7166
$$

∴ Quotient = 20.7166...

34. Find the quotient:
5.728 ÷ 1.52

Ans. : Converting division into a fraction, we get

$$5.728 \div 1.52 = \frac{5.728}{1.52} = \frac{5728 \times 100}{152 \times 1000}$$

$= \frac{5728}{1520}$. Now

$$\begin{array}{r} 1520\overline{)\,5728\,(3.76} \\ -4560 \\ \hline 11680 \\ -10640 \\ \hline 10400 \\ -9120 \\ \hline 1280 \end{array}$$

∴ Quotient = 3.76

35. 13.5 kg of flour (aata) was distributed equally among 15 students. How much flour did each student receive?

Ans. : Total quantity of flour = 13.5 kg
No. of students = 15
Flour per student =0.9 kg
Now

$$\begin{array}{r} 15\overline{)\,13.5\,(.9} \\ -13.5 \\ \hline 0 \end{array}$$

Each student receives = 0.9 kg.

*** Questions With Calculation.[3 Marks Each]** **[42]**

36. Meenu bought 4 notebooks and 3 erasers. The cost of each book was ₹ 15.50, and each eraser was ₹ 2.75. How much did she spend in all?

Ans. : Here cost of 1 notebook = ₹ 15.50
∴ Cost of 4 notebooks = 4 × 15.50
$= \frac{4 \times 1550}{100}$
$= \frac{6200}{100}$
= ₹ 62
and cost of 1 eraser = ₹ 2.75
∴ Cost of 3 erasers = 3 × ₹ 2.75
$= \frac{3 \times 275}{100}$
$= \frac{825}{100}$
= ₹ 8.25
∴ Total amount spent = 62 + 8.25 = ₹ 70.25

37. The thickness of a rupee coin is 1.45 mm. What is the total height of the cylinder formed by placing 36 rupee coins one over the other? Write the answer in centimetres.

Ans. : Thickness of 1 coin = 1.45 mm

Total thickness of 36 coins = 36 × 1.45

$= \frac{36 \times 145}{100}$

$= \frac{5220}{100}$

= 52.2 mm

Now 10 mm = 1 cm

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

$\therefore 52.2mm = \frac{52.2}{10} = 5.22cm.$

38. The price of 1 kg of oranges is ₹ 56.50. What is the price of 2.250 kg of oranges? Can we write 56.50 as 56.5 and 2.250 as 2.25 and multiply? Will we get the same product? Why?

Ans. : Price of 1 kg of oranges = ₹ 56.50

Price of 2.250 kg of oranges = 56.50 × 2.250

$= \frac{5650 \times 2250}{100 \times 1000}$

$= \frac{12712500}{100000}$

= ₹ 127.125

Now 56.5 × 2.25 = 127.125

Hence, we will get the same product.

The zeroes at the end of a decimal do not change its value.

As we saw, 56.50 is the same as 56.5, and 2.250 is the same as 2.25.

Hence, the product of the two numbers will be the same.

39. In which of the following multiplications is the product less than 1? Can you find the answer without actually doing the multiplications?

(a) 7 × 0.6

(b) 0.7 × 0.6

(c) 0.7 × 6

(d) 0.07 × 0.06

Ans. : Yes, we can find the answer without actual multiplication, only by using decimal place values.

Multiplying by a number greater than 1: The product is greater than the original number.

Multiplying by a number between 0 and 1: The product is less than the original number.

Multiplying two numbers between 0 and 1: The product will be less than both factors, and therefore definitely less than 1.

(a) Greater than 1.

(b) Less than 1.
(c) Greater than 1.
(d) Less than 1.

40. Multiplying the following numbers by 10, 100, and 1000 to complete the table.

	× 10	× 100	× 1000
5.7			
23.02			
0.92			
0.306			
24.67			

Ans. :

	× 10	× 100	× 1000
5.7	57	570	5700
23.02	230.2	2302	23020
0.92	9.2	92	920
0.306	3.06	30.6	306
24.67	246.7	2467	24670

41. Find the quotient by converting the denominator into 1, 10, 100, or 1000 and verify the solution by the long division method (division by place value):

$\frac{415}{4}$

Ans. : Given $\frac{415}{4}$

To convert the denominator 4 into 100, multiply both the Nr and Dr by 25.

$\frac{415\times25}{4\times25} = \frac{10375}{100} = 103.75$

Verification

By following the steps

H T O T^{th} H^{th}
4) 415 (1 0 3 . 7 5
–4
15
–12
30
–28
20
20
×

∴ 414 ÷ 4 = 103.75

Hence verified.

42. Find the quotient by converting the denominator into 1, 10, 100, or 1000 and verify the solution by the long division method (division by place value):

$\frac{1217}{2}$

Ans. : Given $\frac{1217}{2}$

To convert the denominator 2 into 10, multiply both the Nr and Dr by 5.

$\frac{1217\times5}{2\times5} = \frac{6085}{10} = 608.5$

Verification

By following the steps:

$$
\begin{array}{r|l}
2 & 1217 \\
 & -12 \\
\hline
 & 017 \\
 & -16 \\
\hline
 & 10 \\
 & -10 \\
\hline
 & 0 \\
\hline
\end{array}
\qquad
\begin{array}{l}
\text{H T O } T^{th} \\
6\,0\,8.5
\end{array}
$$

∴ 1217 ÷ 2 = 608.5

Hence verified.

43. Find the quotient by converting the denominator into 1, 10, 100, or 1000 and verify the solution by the long division method (division by place value):

$\frac{4827}{8}$

Ans. : Given $\frac{4827}{8}$

To convert the denominator 8 into 1000, multiply both the Nr and Dr by 125.

$\frac{4827\times125}{8\times125} = \frac{603375}{1000} = 603.375$

Verification

By following the steps:

$$
\begin{array}{r|l}
8 & 4827 \\
 & -48 \\
\hline
 & 027 \\
 & -24 \\
\hline
 & 30 \\
 & -24 \\
\hline
 & 60 \\
 & -56 \\
\hline
 & 40 \\
 & -40 \\
\hline
 & \times \\
\hline
\end{array}
\qquad
\begin{array}{l}
\text{Th H T O } T^{th} H^{th} Th^{th} \\
0\,6\,0\,3.3\;\;7\;\;5
\end{array}
$$

We get 4827 ÷ 8 = 0603.375

Hence verified.

44. A 4 m long wooden block has to be cut into 5pieces of equal length. What is the length of each piece?

Ans. : Here total length = 4 m

No. of pieces = 5

Length of each piece $= \frac{\text{Total length}}{\text{No. of pieces}}$

$= \frac{4}{5}$

= 0.8 m

Now $5\overline{)4\,(0.8}$

-0

40

-40

0

45. If the perimeter of a regular polygon with 12 sides is 208.8 cm, what is the length of its side?

Ans. : Here Perimeter = 208.8 cm

No. of sides = 12

Length 0f a side $= \frac{\text{Perimeter}}{\text{No. of sides}}$

$= \frac{208.8}{12}$

= 17.4 cm

$12\overline{)208.8\,(17.4}$

-12

88

-84

48

-48

0

46. 3 litres of watermelon juice is shared among 8 friends equally. How much watermelon juice will each get? Express the quantity of juice in millilitres.

Ans. : Here total quantity of juice = 3 litres

No. of friends = 8

$\therefore$ Juice per friend $= \frac{3}{8}$ litre

$= \frac{3}{8} \times 1000ml$

$= \frac{3000}{8}$

= 375 ml

$8\overline{)3000\,(375}$

-24

-60

56

40

-40

0

47. A 210-gram packet of peanut chikki costs ₹ 70.5, while a 110-gram packet of potato chips costs ₹ 33.25. Which is cheaper?

Ans. : Given cost of a peanut is ₹ 70.5 per 210 grams.

$\therefore$ Cost per gram $= \frac{70.5}{210} = 0.3357$

and cost of potato chips is ₹ 33.25 for 110 grams.

$\therefore$ Cost per gram $= \frac{33.25}{110} = 0.3023$

$\because$ 0.3023 < 0.3357.

Hence, potato chips are cheaper.

48. Shyamala bought 3 kg of bananas at ₹ 30/- per kg. She counted 35 bananas in all. She sells each banana for ₹ 5/-. How much profit does she make selling all the bananas?

Ans. : Given that Shyamala bought 3 kg of bananas at ₹ 30 per kg.

Total cost = 3 × 30 = ₹ 90

She sold 35 bananas for ₹ 5 each.

Total revenue = 35 × 5 = ₹ 175

Profit = Total revenue – Total cost

= 175 – 90

= ₹ 85

49. A teacher placed textbooks that are 2.5 cm thick on a bookshelf. The teacher wanted to place 80 textbooks on the shelf. The bookshelf is 160 cm long. How many books could be placed on the shelf? Was there any space left? If yes, how much?

Ans. : Given that, the teacher wanted to place 80 textbooks, each is 2.5 cm thick.

Total thickness required = 80 × 2.5 = 200 cm

The bookshelf is 160 cm long.

The thickness of one book is 2.5 cm.

Number of books that can fit $= \frac{160cm}{2.5cm} = 64$

64 books could be placed on the shelf.

The total thickness of these books = 64 × 2.5 = 160 cm, which is the full length of the shelf.

The teacher wanted to place 80 textbooks, but only 64 textbooks can fit.

Therefore, there is no space left after placing the maximum number of books.

*** Questions With Calculation.[5 Marks Each]** **[50]**

50. Given that 18 × 12 = 216, find the products:
    (a) 18 × 1.2
    (b) 18 × 0.12
    (c) 1.8 × 1.2
    (d) 0.18 × 0.12
    (e) 0.018 × 0.012
    (f) 1.8 × 12
    In which of the cases above is the product less than 1?

    Ans. : (a) Here 18 × 12 = 216 .....(i)
    Now 18 × 1.2 $= \frac{18\times12}{10}$ [Using (i)]
    $= \frac{216}{10}$
    = 21.6 (1 decimal place)
    (b) 18 × 0.12 $= \frac{18\times12}{100}$ [Using (i)]
    $= \frac{216}{100}$
    = 2.16 (2 decimal places)
    (c) $1.8 \times 1.2 = \frac{18}{10} \times \frac{12}{10} = \frac{216}{100}$ [Using (i)]
    = 2.16 (2 decimal places)
    (d) 0.18 × 0.12 $= \frac{18}{100} \times \frac{12}{100} = \frac{216}{100\times100}$ [Using (i)]
    = 0.0216 (4 decimal places)
    (e) 1.8 × 12 $= \frac{18\times12}{10} = \frac{216}{10}$ [Using (i)]
    = 21.6 (1 decimal place)
    When multiplying two numbers positive if both numbers are less than 1, their product will also be less than 1.
    In (d) and (e) product is less than 1.

51. Find the quotient by converting the denominator into 1, 10, 100, or 1000 and verify the solution by the long division method (division by place value):
    $\frac{18}{5}$

    Ans. : Given $\frac{18}{5}$
    To convert the denominator 5 into 10, multiply both the numerator and Dr by 2.
    $\frac{18\times2}{5\times2} = \frac{36}{10} = 3.6$
    Verification
    18 ÷ 5
    Dividing 1 ten and 8 ones into 5 equal parts.
    1 < 5
    It means we need to regroup 1 ten as 10 ones,
    i.e., 10 + 8 = 18 ones
    18 ones ÷ 5

3 ones remain.

To divide 3 ones into 5 equal parts.

Regroup the 3 ones as 30 Tenths. (Place a decimal while regrouping ones into tenths).

30 Tenths ÷ 5 = 6

Then, 18 ÷ 5 = 3.6

```
          T O Tenths
5 ) 18 ( 0 3 . 6
   -15
    30
   -30
     0
```

Hence verified.

52. Find the quotients:

(a) 2.46 ÷ 1.5 = _____

(b) 2.46 ÷ 0.15 = _____

(c) 2.46 ÷ 0.015 = _____

Is the quotient obtained in 24.6 ÷ 1.5 the same as the quotient obtained in 2.46 ÷ 0.15?

Ans. : Converting 2.46 ÷ 1.5 into fraction

$\frac{2.46}{1.5} = \frac{246 \times 10}{15 \times 100} = \frac{246}{150}$

```
15 ) 246 ( 16.4
    -15
     96
    -90
      60
     -60
       0
```

∴ Quotient = 1.64

(b) Converting 2.46 ÷ 0.15 into a fraction, we get

$\frac{2.46}{0.15} = \frac{246 \times 100}{15 \times 100} = \frac{246}{15}$

```
15 ) 246 ( 16.4
    -15
     96
    -90
      60
     -60
       0
```

∴ Quotient = 16.4

(c) Converting 2.46 ÷ 0.015 into a fraction, we get

$\frac{2.46}{0.015} = \frac{246\times1000}{15\times100} = \frac{2460}{15}$

$$
\begin{array}{r}
15\overline{)\,2460\,(164} \\
-15 \\
\hline
96 \\
-90 \\
\hline
60 \\
-60 \\
\hline
0
\end{array}
$$

∴ Quotient = 164

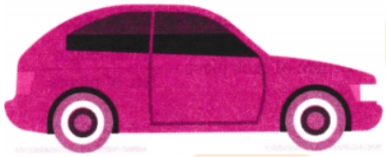
Now $\frac{24.6}{1.5} = \frac{246\times10}{15\times10} = \frac{246}{15}$

and $\frac{2.46}{0.15} = \frac{246\times100}{15\times100} = \frac{246}{15}$

Both are the same.

Hence quotient obtained in 24.6 ÷ 1.5 is the same as the quotient obtained in 2.46 ÷ 0.15.

53. A car covers 234.45 km using 12.6 litres of petrol. What is the distance travelled per litre?



Ans. : Given total distance = 234.45 km

Total petrol = 12.6 litres

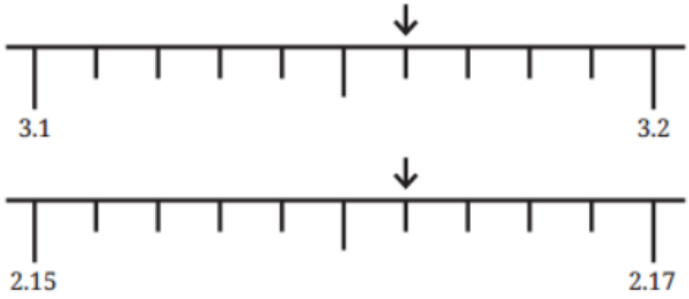
$$\text{Distance per litre} = \frac{\text{Total distance}}{\text{Total petrol}} = \frac{234.45}{12.6} = \frac{23445\times10}{126\times100} = \frac{23445}{1260} = 18.607 \text{ km}$$

Now

$$
\begin{array}{r}
1260\overline{)\,23445\,(18.607} \\
-1260 \\
\hline
10845 \\
-10080 \\
\hline
7650 \\
-7560 \\
\hline
9000 \\
-8820 \\
\hline
180
\end{array}
$$

Hence, the total distance travelled per litre of petrol is 18.607 km.

54. Write the decimal number at the arrow mark:



Ans. : (i) Here number line is divided into 10 equal parts.

Difference between 3.2 and 3.1 = 3.2 – 3.1 = 0.1

Value of each mark $= \frac{0.1}{10} = 0.01$

Now the arrow is on the sixth mark after 3.1

∴ Decimal number at the arrow mark = 3.1 + 6 × 0.01

= 3.1 + 0.06

= 3.16

(ii) Here number line is divided into 10 equal parts between 2.15 and 2.17.

∴ Difference between 2.17 and 2.15 = 2.17 – 2.15 = 0.02

Value of each mark $= \frac{0.02}{10} = 0.002$

Arrow is on the sixth mark after 2.15

∴ Decimal number at the arrow mark = 2.15 + 6 × 0.002

= 2.150 + 0.012

= 2.162

55. Fill in the following blanks appropriately:

1cm = 10mm 1m = 100cm 1km = 1000m	1 kg = 1000g 1 g = 1000mg	1l = 1000ml

5.5km =_____m 68g =_____ kg	35cm =_____ m 9.02m =_____ mm	14.5cm =_____ mm 125.5ml =_____ l

Ans. : Here, (i) 1 km = 1000 m

∴ 5.5 km = 5.5 × 1000 = 5500 m

(ii) 1 m = 100 cm

$\therefore 35cm = \frac{35}{100} = 0.35m$

(iii) 1 cm = 10 mm

$\therefore 14.5cm = 14.5 \times 10 = 145mm$

(iv) 1 kg = 1000 g

$\therefore 68g = \frac{68}{1000} = 0068kg$

(v) 1 m = 1000 mm

∴ 9.02 m = 9.02 × 1000 = 9020 mm

(vi) 1 l = 1000 ml

$\therefore 125.5ml = \frac{125.5}{1000} = 0.1255I$

5.5 km = 5500m	35 cm = 0.35m	14.5 cm = 145mm
68 g = 0.068kg	9.02 m = 9020mm	125.5 ml = 0.1255l

56. The following problem was set by Sridharacharya in his book, Patiganita.''$6\frac{1}{4}$ is divided by $2\frac{1}{2}$, and $60\frac{1}{4}$ is divided by $3\frac{1}{2}$ Tell the quotients separately.'' Can you try to solve by converting the fractions into decimals?

Ans. : Given $6\frac{1}{4} = 6 + \frac{1}{4} = 6 + 0.25 = 6.25$

and $2\frac{1}{2} = 2 + \frac{1}{2} = 2 + 0.5 = 2.5$

$60\frac{1}{4} = 60 + \frac{1}{4} = 60 + 0.25 = 60.25$

$3\frac{1}{2} = 3 + 0.5 = 3.5$

Now $6\frac{1}{4}$ is divided by $2\frac{1}{2}$.

$\Rightarrow \quad \frac{6.25}{2.5} = \frac{625 \times 10}{25 \times 100} = \frac{625}{250}$

$$\begin{array}{r} 250\overline{)\,625\,(2.5} \quad \therefore \quad \text{Quotient} = 2.5 \\ -500 \\ \hline 1250 \\ -1250 \\ \hline 0 \end{array}$$

Also $60\frac{1}{4}$ is divided by $3\frac{1}{2}$.

$\Rightarrow \frac{60.25}{3.5} = \frac{6025 \times 10}{35 \times 100} = \frac{6025}{350}$

$$\therefore \begin{array}{r} 350\overline{)\,6025\,(17.21} \\ -350 \\ \hline 2525 \\ -2450 \\ \hline 750 \\ -700 \\ \hline 500 \\ -350 \\ \hline 150 \end{array}$$

$\therefore$ Quotient = 17.21

57. Find the following quotients given that 756 ÷ 36 = 21:

(a) 75.6 ÷ 3.6

(b) 7.56 ÷ 0.36

(c) 756 ÷ 0.36

(d) 75.6 ÷ 360

(e) 7560 ÷ 3.6

(f) 7.56 ÷ 0.36

Ans. : (a) Given $756 \div 36 = 21$ ...(i)

Here $\frac{75.6}{3.6} = \frac{756 \times 10}{36 \times 10} = \frac{756}{36} = 21$ [Using (i)]

(b) Here $\frac{7.56}{0.36} = \frac{756 \times 100}{36 \times 100} = \frac{756}{36} = 21$ [Using (i)]

(c) Here $\frac{756}{0.36} = \frac{756 \times 100}{36} = 21 \times 100 = 2100$ [Using (i)]

(d) Here $\frac{75.6}{360} = \frac{756}{360 \times 10} = \frac{756}{360 \times 10}$

$= \frac{21}{100} = 0.21$ [Using (i)]

(e) Here $\frac{7560}{3.6} = \frac{7560}{36} \times 10 = \frac{756}{36} \times 10 \times 10$

$= 21 \times 10 \times 10 = 2100$ [Using (i)]

(f) Here $\frac{7.56}{0.36} = \frac{756 \times 100}{36 \times 100} = \frac{756}{36} = 21$ [Using (i)]

58. Find the missing cells if each cell represents a ÷ b:

$b \downarrow a \rightarrow$	1517	151.7	15.17	1.517	15170
37	41				
3.7			4.1		
0.37					
0.037		4100			
370					

Ans. :

Here table given here represents division, where the value in each cell is the result of dividing the number in the corresponding 'a' column b the number in the corresponding row 'b'.

Given 1517 ÷ 37 = 41

$\frac{151.7}{3.7} = 41$

$\frac{15.17}{0.37} = 41$

$\frac{1.517}{37} = 0.041$

$b \downarrow a \rightarrow$	1517	151.7	15.17	1.517	15170
37	**41**	4.1	0.41	0.041	410
3.7	410	41	4.1	0.41	4100
0.37	4100	410	**4.1**	4.1	41000
0.037	41000	**4100**	410	4.1	410000
370	4.1	0.41	0.041	0.0041	41

59. Sort the following expressions in increasing order:

(a) 245.05 × 0.942368

(b) 245.05 × 7.9682

(c) 245.05 ÷ 7.9682

(d) 245.05 ÷ 0.942368

(e) 245.05

(f) 7.9682

Ans. : Let A = 245.05, B = 0.942368, C = 7.9682

We note that B < 1 and C > 1

(a) Now A × B = 245.05 × 0.942368 < 245.05

(∴ Multiplying a number by a value less than 1 results in a smaller number)
(b) A × C = 245.05 × 7.9682 > 245.05
(Multiplying a number by a value greater than 1 results in a larger number)
(c) A ÷ C = 2.4505 ÷ 7.9682 < 245.05
(Dividing a number by a value greater than 1 results in a smaller number)
(d) A ÷ B = 245.05 ÷ 0.942368 > 245.05
(Dividing a number by a value greater than 1 results in a larger number)
(e) Now, expression less than 245.05
∴ 0.942368 is closer to 1 than 7.9682 is to 1.
0.942368 will result in a value closer to 245.05 than dividing by 7.9682.
∴ (c) < (a)
Again, 0.942368 is closer to 1 than 7.9682 is to 1.
∴ Dividing by 0.942368 will result in a value closer to 245.05 than multiplying by 7.9682.
∴ (d) < (b)
Also, (f) 7.9682 is significantly smaller than 245.05; it will be the smallest value.
(f) ∴ 7.9682 < (e) 245.05 ÷ 7.9682
Combining all, we get (f), (c), (a), (e),(d), (b).

----- -----