

Jender Heart High School, Sec-33B, Chandigarh

Class - VI

Date - 05.08.24

Subject - Mathematics

Teacher - Ms. Sushma

Exercise 4E

Find the product:

$$1. \frac{5}{7} \times \frac{2}{3} = \frac{5 \times 2}{7 \times 3} = \frac{10}{21} \text{ Ans.}$$

$$2. \frac{3}{5} \times \frac{4}{9} = \frac{\cancel{3}^1 \times 4}{5 \times \cancel{9}_3} = \frac{4}{5 \times 3} = \frac{4}{15} \text{ Ans.}$$

$$3. \frac{12}{35} \times \frac{14}{27} = \frac{\cancel{12}^4 \times \cancel{14}^2}{\cancel{35}_5 \times \cancel{27}_9} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15} \text{ Ans.}$$

$$4. 2\frac{11}{27} \times 18 = \frac{65}{27} \times \frac{18}{1} = \frac{65 \times \cancel{18}^2}{\cancel{27}_3} = \frac{65 \times 2}{3} = \frac{130}{3} \\ = 43\frac{1}{3} \text{ Ans}$$

$$5. 1\frac{3}{4} \times 2\frac{1}{7} \times 4\frac{4}{5} = \frac{\cancel{7}^1}{4_1} \times \frac{\cancel{15}^3}{\cancel{7}_1} \times \frac{\cancel{24}^6}{8_1} = 3 \times 6 = 18 \text{ Ans.}$$

$$6. 3\frac{1}{6} \times 2\frac{3}{4} \times 2\frac{4}{11} = \frac{19}{6} \times \frac{\cancel{4}^1}{\cancel{4}_1} \times \frac{26}{\cancel{11}^1} = \frac{19 \times \cancel{26}^{13}}{6 \times \cancel{4}_2} = \frac{247}{12} \\ = 20\frac{7}{12} \text{ Ans.}$$

Divide

$$(i) \frac{13}{21} \div \frac{2}{7} = \frac{13}{\cancel{21}_3} \times \frac{7}{2} = \frac{13}{6} = 2 \frac{1}{6} \text{ Ans}$$

$$(ii) 3\frac{1}{8} \div 5 = \frac{25}{8} \div \frac{5}{1} = \frac{25}{8} \times \frac{1}{\cancel{5}_1} = \frac{5}{8} \text{ Ans.}$$

$$(iii) 15\frac{8}{9} \div 3\frac{2}{3} = \frac{143}{9} \div \frac{11}{3} = \frac{13\cancel{143}_{11}}{9 \times 3} \times \frac{3}{\cancel{11}_1} = \frac{13}{3} = 4\frac{1}{3} \text{ Ans}$$

Ques 27 The cost of 1L of milk is ₹ $42\frac{3}{5}$. Find the cost of $12\frac{1}{2}$ L of milk.

Ans:- Cost of 1L of milk = ₹ $42\frac{3}{5} = ₹ \frac{213}{5}$

$$\begin{aligned} \text{Cost of } 12\frac{1}{2} \text{ L of milk} &= \frac{213}{5} \times 12\frac{1}{2} = \frac{213}{\cancel{5}_1} \times \frac{25}{2} \\ &= \frac{1065}{2} = ₹ 532\frac{1}{2} \text{ Ans} \end{aligned}$$

Ques 28 The cost of $3\frac{1}{2}$ m of cloth is ₹ $547\frac{3}{4}$. Find the cost of 1m of cloth.

Ans:- Cost of $3\frac{1}{2}$ m of cloth = ₹ $547\frac{3}{4} = ₹ \frac{2191}{4}$

$$\begin{aligned} \text{Cost of 1m of cloth} &= \frac{2191}{4} \div 3\frac{1}{2} = \frac{2191}{4} \div \frac{7}{2} \\ &= \frac{\cancel{2191}_{7}}{4 \times 2} \times \frac{2}{\cancel{7}_1} = \frac{313}{2} = ₹ 156\frac{1}{2} \end{aligned}$$

So, the cost of 1m of cloth is ₹ $156\frac{1}{2}$ Ans.

Qn.29. Tanvy cuts 54m of cloth into pieces, each of length $3\frac{3}{8}$ m. How many pieces does she get?

Soln:→ Total length of a cloth = 54m
Length of 1 piece of cloth = $3\frac{3}{8}$ m = $\frac{27}{8}$ m

$$\begin{aligned}\text{No. of pieces} &= \text{Total length} \div \text{length of 1 piece} \\ &= 54 \div \frac{27}{8} \\ &= \frac{54 \times 8}{27} = 2 \times 8 = 16\end{aligned}$$

So, 16 pieces can be cut.

Qn.30. The area of a rectangular plot of land is $46\frac{2}{5}$ sq.m. If its length is $7\frac{1}{4}$ m, find its breadth.

Soln:→ Area of a rectangular plot of land = $46\frac{2}{5}$ sq m

$$= \frac{232}{5} \text{ sq m}$$

$$\text{Length of a rectangular plot} = 7\frac{1}{4} = \frac{29}{4} \text{ m}$$

$$\begin{aligned}\text{Breadth of a rectangular plot} &= \frac{232}{5} \div \frac{29}{4} \\ &= \frac{232 \times 4}{5 \times 29} = \frac{8 \times 4}{5} = \frac{32}{5}\end{aligned}$$

$$= 6\frac{2}{5} \text{ m}$$

So, $6\frac{2}{5}$ m is the breadth of a rectangular plot.

SIMPLIFICATION

Numerical Expression:→

A combination of numbers connected by the one or more of the symbols $+$, $-$, $\times$, $\div$ and 'of' etc. is called a numerical expression.

On performing various given operations in a given expression and getting its value is called the simplification of the given expression.

For simplification of an expression, we must perform these operations strictly in the following order.

- | | | | |
|--------------|------------------|----------------|---------------------|
| (i) Bracket | (ii) Of | (iii) Division | (iv) Multiplication |
| (v) Addition | (vi) Subtraction | | |

The order of simplifying brackets is:

- | | | |
|----------------------------|------------------------|----------------------|
| (i) Bar $-$ | (ii) Parentheses $()$ | (iii) Braces $\{ \}$ |
| (iv) Square brackets $[]$ | | |

Exercise 4F

1 Find:

(i) $\frac{1}{8}$ of 40

$$\frac{1}{8} \times \frac{40}{1} = 5$$

$$(ii) \frac{4}{11} \text{ of } 4\frac{2}{5}$$

$$= \frac{4}{11} \times \frac{22^2}{5} = \frac{4 \times 2}{5} = \frac{8}{5} = 1\frac{3}{5} \text{ Ans.}$$

$$(iii) 1\frac{3}{5} \text{ of } 6\frac{1}{4}$$

$$= \frac{8^2}{5} \times \frac{25^5}{4} = 2 \times 5 = 10 \text{ Ans.}$$

$$(iv) \frac{3}{4} \text{ of } ₹1$$

$$₹1 = 100 \text{ paise}$$

$$\frac{3}{4} \times 100^{25} = 3 \times 25 = 75 \text{ paise}$$

$$(v) \frac{5}{8} \text{ of } 1 \text{ km}$$

$$1 \text{ km} = 1000 \text{ m}$$

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

Simplify:

$$2. 1\frac{1}{6} \div 1\frac{5}{9} \times 3\frac{1}{3}$$

$$= \frac{7}{6} \div \frac{14}{9} \times \frac{10}{3}$$

$$= \frac{7}{6} \times \frac{9^3}{14} \times \frac{10}{3} = \frac{8 \times 10^5}{2 \times 3 \times 2} = \frac{5}{2} = 2\frac{1}{2} \text{ Ans.}$$

$$3. \quad 1\frac{1}{3} \div \frac{3}{7} \text{ of } 2\frac{5}{8} + 1\frac{1}{9}$$

$$= \frac{4}{3} \div \frac{3}{7} \times \frac{21}{8} + \frac{10}{9}$$

$$= \frac{4}{3} \div \frac{9}{8} + \frac{10}{9}$$

$$= \frac{4}{3} \times \frac{8}{9} + \frac{10}{9}$$

$$= \frac{32}{27} + \frac{10}{9}$$

$$\text{LCM}(9, 27) = 27$$

$$= \frac{32}{27} + \frac{10}{9} \times \frac{3}{3}$$

$$= \frac{32}{27} + \frac{30}{27} = \frac{62}{27} = 2\frac{8}{27} \text{ Ans.}$$

$$4. \quad \left(\frac{2}{3} + \frac{4}{9}\right) \text{ of } \frac{3}{5} \div 1\frac{2}{3} \times 1\frac{1}{4} - \frac{1}{3}$$

$$\left(\frac{6}{9} + \frac{4}{9}\right) \text{ of } \frac{3}{5} \div \frac{5}{3} \times \frac{5}{4} - \frac{1}{3}$$

$$\frac{10}{9} \times \frac{3}{5} \div \frac{5}{3} \times \frac{5}{4} - \frac{1}{3}$$

$$\frac{10}{9} \times \frac{3}{5} \times \frac{3}{5} \times \frac{5}{4} - \frac{1}{3} = \frac{1}{2} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6} = \frac{1}{6} \text{ Ans.}$$

$$5. \quad 3\frac{7}{8} - \left\{ 1\frac{3}{8} \div \left(2\frac{4}{5} - 1\frac{7}{10} \right) \right\}$$

$$\text{Soln:-} \quad \frac{31}{8} - \left\{ \frac{11}{8} \div \left(\frac{14}{5} - \frac{17}{10} \right) \right\}$$

$$\frac{31}{8} - \left\{ \frac{11}{8} \div \left(\frac{28}{10} - \frac{17}{10} \right) \right\}$$

$$\frac{31}{8} - \left\{ \frac{11}{8} \div \left(\frac{28-17}{10} \right) \right\}$$

$$\frac{31}{8} - \left\{ \frac{11}{8} \div \frac{11}{10} \right\}$$

$$\frac{31}{8} - \left\{ \frac{11}{8} \times \frac{10}{11} \right\}$$

$$\frac{31}{8} - \frac{5 \times 2}{4} = \frac{31}{8} - \frac{10}{8} = \frac{31-10}{8} = \frac{21}{8} = 2\frac{5}{8} \text{ Ans.}$$

$$6. \quad 3 \div \left[3 \times \left\{ 3 - \left(3 - \frac{1}{4} \right) \right\} \right]$$

$$= 3 \div \left[3 \times \left\{ 3 - \left(\frac{3}{1} - \frac{1}{4} \right) \right\} \right]$$

$$= 3 \div \left[3 \times \left\{ 3 - \left(\frac{12}{4} - \frac{1}{4} \right) \right\} \right]$$

$$= 3 \div \left[3 \times \left\{ 3 - \frac{11}{4} \right\} \right]$$

$$= 3 \div \left[3 \times \left\{ \frac{3 \times 4}{1 \times 4} - \frac{11}{4} \right\} \right]$$

$$= 3 \div \left[3 \times \left\{ \frac{12}{4} - \frac{11}{4} \right\} \right]$$

$$= 3 \div \left[3 \times \frac{1}{4} \right] = 3 \div \frac{3}{4} = 3 \times \frac{4}{3} = 4 \text{ Ans.}$$

$$7. \quad 5\frac{1}{3} - \left[2\frac{1}{3} \div \left\{ \frac{3}{4} - \frac{1}{2} \times \left(\frac{7}{10} - \frac{3}{5} \right) \right\} \right]$$

$$\frac{16}{3} - \left[\frac{7}{3} \div \left\{ \frac{3}{4} - \frac{1}{2} \times \left(\frac{7}{10} - \frac{6}{10} \right) \right\} \right]$$

$$\frac{16}{3} - \left[\frac{7}{3} \div \left\{ \frac{3}{4} - \frac{1}{2} \times \frac{1}{10} \right\} \right]$$

$$\frac{16}{3} - \left[\frac{7}{3} \div \left\{ \frac{3}{4} - \frac{1}{20} \right\} \right]$$

$$\frac{16}{3} - \left[\frac{7}{3} \div \left\{ \frac{15}{20} - \frac{1}{20} \right\} \right]$$

$$\frac{16}{3} - \left[\frac{7}{3} \div \frac{14}{20} \right] = \frac{16}{3} - \left[\frac{7}{3} \times \frac{20}{14} \right]$$

$$\frac{16}{3} - \left[\frac{10}{3} \right] = \frac{16}{3} - \frac{10}{3} = \frac{6}{3} = 2 \text{ Ans.}$$