

UNIT 6

RATIO & PROPORTION

EXERCISE NO. 6.1

Q.1 Reduce the following into lowest equivalent form:

(i) 4:50

Solution:

$$\begin{aligned} 4:50 \\ &= 4 \div 2 : 50 \div 2 \\ &= 2:25 \quad \text{Ans} \end{aligned}$$

(ii) 0.8:72

Solution:

$$\begin{aligned} 0.8:72 \\ &= 0.8 \div 8 : 72 \div 8 \\ &= 0.1 : 9 \\ &= 0.1:90 \quad \frac{90}{0.8} \\ &= 1:90 \quad \text{Ans} \end{aligned}$$

(iii) 3.5 : 4.9

Solution:

$$\begin{aligned} 3.5 : 4.9 \\ &= \frac{3.5}{4.9} = \frac{350}{490} \frac{35}{49} = \frac{4.90}{3.50} \\ &= \frac{35}{49} \frac{5}{7} = \frac{490}{350} \\ &= 5:7 \quad \text{Ans} \end{aligned}$$

(iv) $\frac{13}{60} : \frac{7}{15}$

Solution:

$$\begin{aligned} & \frac{13}{60} : \frac{7}{15} \\ &= \frac{13}{60} \times 60 : \frac{7}{15} \times 60 \\ &= 13 : 28 \quad \text{Ans} \end{aligned}$$

(v) $\frac{5}{6} : \frac{3}{10}$

Solution:

$$\begin{aligned} &= \frac{5}{6} : \frac{3}{10} \\ &= \frac{5}{6} \times 30 : \frac{3}{10} \times 30 \\ &= 25 : 9 \quad \text{Ans} \end{aligned}$$

(vi) $\frac{2}{3} : 5$

Solution:

$$\begin{aligned} &= \frac{2}{3} : 5 \\ &= \frac{2}{3} \times 3 : 5 \times 3 \\ &= 2 : 15 \quad \text{Ans} \end{aligned}$$

(vii) $2\frac{1}{2} : 4$

Solution:

$$\begin{aligned} &= \frac{5}{2} : 4 \\ &= \frac{5}{2} \times 2 : 4 \times 2 \\ &= 5 : 8 \quad \text{Ans} \end{aligned}$$

(viii) $\frac{1}{3} : \frac{1}{6} : \frac{1}{9}$

Solution:

$$\frac{1}{3} : \frac{1}{6} : \frac{1}{9}$$

$$L.C.M = 18,$$

$$\frac{1}{3} \times 18 : \frac{1}{6} \times 18 : \frac{1}{9} \times 18$$

$$= 6 : 3 : 2 \text{ Ans}$$

$$3 \quad 3, 6, 9$$

$$2 \quad 1, 2, 3$$

$$3 \quad 1, 1, 3$$

$$1, 1, 1$$

$$3 \times 2 \times 3 = 18$$

(xi) $1.5 : 5 : 5.8$

Solution:

$$= \frac{15}{10} : 5 : \frac{58}{10}$$

$$= \frac{15}{10} \times 10 : 5 \times 10 : \frac{58}{10} \times 10$$

$$= 15 : 50 : 58 \quad \text{Ans}$$

(x) $3\frac{2}{5} : 0.6 : 3.5$

Solution:

$$= \frac{17}{5} : \frac{6}{10} : \frac{35}{10}$$

$$= \frac{17}{5} \times 10 : \frac{6}{10} \times 10 : \frac{35}{10} \times 10$$

$$= 34 : 6 : 35 \quad \text{Ans}$$

(xi) $\frac{1}{5} : \frac{1}{10} : \frac{1}{15}$

Solution:

$$= \frac{1}{5} \times 30 : \frac{1}{10} \times 30 : \frac{1}{15} \times 30$$

$$= 6 : 3 : 2 \quad \text{Ans}$$

$$(xii) \frac{1}{7} : \frac{1}{14} : \frac{1}{21}$$

Solution:

$$= \frac{1}{7} : \frac{1}{14} : \frac{1}{21}$$

$$L.C.M = 42$$

$$= \frac{1}{7} \times 42 : \frac{1}{14} \times 42 : \frac{1}{21} \times 42$$

$$= 6 : 3 : 2 \quad \text{Ans}$$

$$7 \quad 7, 14, 21$$

$$2 \quad 1, 2, 3$$

$$3 \quad 1, 1, 3$$

$$1, 1, 1$$

$$7 \times 2 \times 3 = 42$$

Q.2 Find ratio of the following and write in lowest form:

(i) Rs. 150 and Rs. 180

Solution:

$$150 : 180$$

$$= (150 : 180) \div 10$$

$$= (15 : 18) \div 3$$

$$= 5 : 6 \quad \text{Ans}$$

(ii) 250 cm and 1 m

Solution:

$$250 \text{ cm and } 1 \text{ m}$$

$$100 \text{ cm} = 1 \text{ m}$$

$$\therefore 250 \text{ cm} : 100 \text{ cm}$$

$$= (250 : 100) \div 10$$

$$= (25 : 10) \div 5$$

$$= 5 : 2 \quad \text{Ans}$$

(iii) 700 g and 2 kg

Solution:

$$700 \text{ g and } 2 \text{ kg}$$

$$1000 = 1 \text{ kg}$$

$$\therefore 700 \text{ g} : 2000 \text{ g}$$

$$= (700 : 2000) \div 100$$

$$= 7 : 20 \quad \text{Ans}$$

(iv) 3 hours and 210 moments:

Solution:

$$60 \text{ min} = 1 \text{ hrs}$$

$$60 \times 3 = 180 \text{ min}$$

$$\therefore 180 : 210$$

$$= (180 : 210) \div 10$$

$$= (18 : 21) \div 3$$

$$= 6 : 7 \quad \text{Ans.}$$

(v) 5 years and 3 months

Solution:

$$5 \text{ years and 3 months}$$

$$= 12 \text{ month} = 1 \text{ year}$$

$$= 5 \times 12 = 60 \text{ months}$$

$$= 60 : 3$$

$$= (60 : 3) \div 3$$

$$= 20 : 1 \quad \text{Ans.}$$

(vi) 15 days, 2 weeks and 1 month:

Solution:

$$15 \text{ day 2 weeks and 1 month}$$

$$7 \text{ days} = 1 \text{ week}$$

$$30 \text{ days} = 1 \text{ month}$$

$$2 \times 7 = 14 = 15 : 14 : 30$$

$$= 15 : 14 : 30 \quad \text{Ans.}$$

Q.3 Convert the following fractions into ratio form:

(i) $\frac{2}{9}$

Solution:

$$\frac{2}{9} = 2 : 9$$

$$= 2 : 9 \quad \text{Ans}$$

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

Solution:

$$\begin{aligned}\frac{5}{6} &= 5 : 6 \\ &= 5 : 6 \quad \text{Ans}\end{aligned}$$

(iii) $\frac{1}{75}$

Solution:

$$\begin{aligned}\frac{1}{75} &= 1 : 75 \\ &= 1 : 75 \quad \text{Ans}\end{aligned}$$

(iv) 3

Solution:

$$\begin{aligned}3 &= \frac{3}{1} \\ \frac{3}{1} &= 3 : 1 \\ &= 3 : 1 \quad \text{Ans}\end{aligned}$$

(v) $\frac{p}{q}$

Solution:

$$\begin{aligned}\frac{p}{q} &= p : q \\ &= p : q \quad \text{Ans}\end{aligned}$$

Q.4 Represent the following into fraction:

(i) 1 : 5

Solution:

$$\begin{aligned}1 : 5 &= \frac{1}{5} \\ &= \frac{1}{5} \quad \text{Ans}\end{aligned}$$

(ii) 2 : 19

Solution:

$$\begin{aligned} 2 : 19 &= \frac{2}{19} \\ &= \frac{2}{19} \quad \text{Ans} \end{aligned}$$

(iii) 8 : 1

Solution:

$$\begin{aligned} 8 : 1 &= \frac{8}{1} \\ &= 8 \quad \text{Ans} \end{aligned}$$

(iv) 75 : 76

Solution:

$$75 : 76 = \frac{75}{76} \quad \text{Ans}$$

(v) $x : y$

Solution:

$$x : y = \frac{x}{y} \quad \text{Ans}$$

Q.5 In a science test, 25 students out of 45 students of class VI were passed. Find the ratio between the passed students and total students:

Solution:

$$\begin{aligned} &= 25 : 45 \\ &= \frac{25}{5} : 45 \\ &= 5 : 9 \quad \text{Ans} \end{aligned}$$

Q.6 Arshad earns Rs. 20,000 per month. Find the ratio of this monthly income and expenditure if he saves Rs. 5000 per month.

Solution:

$$\begin{aligned} &= 20,000 : 5000 \\ &= \frac{20,000}{1000} : \frac{5000}{1000} \\ &= (20 : 5) \div 5 \\ &= 4 : 1 \quad \text{Ans} \end{aligned}$$

Q.7 The measures of sides of two squares are 2 cm and 5 cm. Find the ratio of their perimeters.

Solution:

$$\begin{aligned} &= 2 \text{ cm} : 5 \text{ cm} \\ &= 2 : 5 \quad \text{Ans} \end{aligned}$$

Q.8 Weight of a sack of flour is 16 kg and the weight of another sack is 14 kg 400 g. Find the ratio among their weight.

Solution:

$$\begin{aligned} &16 \text{ kg} : 14 \text{ kg}, 400 \text{ g} \\ &1 \text{ kg} = 1000 \text{ g} \\ &16 \text{ kg} = 16000 \text{ g}, 14 \text{ kg}, 400 \text{ g} = 14400 \text{ g} \\ &= 16000 : 14400 \\ &= 160 : 144 \\ &= (80 : 72) \div 8 \\ &= 10 : 9 \quad \text{Ans} \end{aligned}$$

Q.9 Measures of angles of a triangle are 30° , 60° and 90° find the ratio of these angles according to the given order.

Solution:

$$\begin{aligned} &= 30^\circ, 60^\circ \text{ and } 90^\circ \\ &= 30 : 60 : 90 \\ &= 1 : 2 : 3 \quad \text{Ans} \end{aligned}$$

EXERCISE 6.2

Q.1 Identify mean and extremes in the following:

(i) $2 : 5 = 8 : 20$

Solution:

$$2 : 5 = 8 : 20$$

$$2 : 5 = 8 : 20$$

means = 5 and 8

extremes = 2 and 20 Ans

(ii) $3 : 4 = 6 : 8$

Solution:

$$3 : 4 = 6 : 8$$

$$3 : 4 = 6 : 8$$

means = 4 and 6

extremes = 3 and 8 Ans

(iii) $a : b = c : d$

Solution:

$$a : b = c : d$$

$$a : b = c : d$$

means = b and c

extremes = a and d Ans

Q.2 Decide whether the four numbers given in each of the following are in proportion or not.

(i) **18, 24, 30 and 40**

Solution:

$$18 : 24 = 30 : 40$$

$$18 : 24 = 30 : 40$$

$$24 \times 30 = 720$$

$$18 \times 40 = 720$$

18, 24, 30, 40 are in proportion

(ii) 14, 19, 3 and 4

Solution:

$$14 : 19 = 3 : 4$$

$$14 : 19 = 3 : 4$$

$$19 \times 3 = 57$$

$$14 \times 4 = 56$$

$\therefore$ 14, 19, 3, 4 are not in proportion

(iii) 6, 8, 12 and 16

Solution:

$$6 : 8 = 12 : 16$$

$$6 : 8 = 12 : 16$$

$$8 \times 12 = 96$$

$$6 \times 16 = 96$$

$\therefore$ 6, 8, 12, 16 are in proportion.

(iv) 15, 20, 16 and 21

Solution:

$$15 : 20 = 16 : 21$$

$$15 : 20 = 16 : 21$$

$$20 \times 16 = 320$$

$$15 \times 21 = 315$$

$\therefore$ 15, 20, 16, 21 are not in proportion

(v) 20, 30, 40 and 50

Solution:

$$20 : 30 = 40 : 50$$

$$20 : 30 = 40 : 50$$

$$30 \times 40 = 1200$$

$$20 \times 50 = 1000$$

$\therefore$ 20, 30, 40, 50 are not in proportion

(vi) 21, 57, 28 and 76

Solution:

$$21, 57, 28 \text{ and } 76$$

$$21 : 57 = 28 : 76$$

$$57 \times 28 = 1596$$

$$21 \times 76 = 1596$$

$\therefore 21, 57, 28, 76$ are in proportion

Q.3 Find the value of x if the proportion $2 : x = 3 : 7$.

Solution:

$$2 : x = 3 : 7$$

$$2 : x = 3 : 7$$

$$2 \times 7 = x \times 3$$

$$\frac{2 \times 7}{3} = x$$

$$x = \frac{14}{3} \text{ or } x = 4 \frac{2}{3}$$

$$x = 4 \frac{2}{3} \quad \text{Ans}$$

$$\begin{array}{r} 4 \\ 3 \overline{)14} \end{array}$$

$$\frac{12}{2}$$

$$2$$

$$= 4 \frac{2}{3}$$

Q.4 Find the fourth proportion in the following:

(i) 2, 3 and 6

Solution:

Suppose the fourth proportional be ' x '

$$2 : 3 = 6 : x$$

$$2 : 3 = 6 : x$$

$$2x = 3 \times 6$$

$$\frac{2x}{2} = \frac{3 \times 6}{2} = 9$$

$$\text{Fourth Proportion} = 9 \quad \text{Ans}$$

(ii) $\frac{11}{24}$, $\frac{7}{15}$ and $\frac{5}{8}$

Solution:

Suppose the fourth proportional be ' x '

$$\frac{11}{24} : \frac{7}{15} = \frac{5}{8} : x$$

$$\frac{11}{24} : \frac{7}{15} = \frac{5}{8} : x$$

$$\frac{11}{24} x = \frac{7}{15} \times \frac{5}{8}$$

$$\frac{11}{24} \cdot x = \frac{7}{24}$$

$$x = \frac{7}{24} \times \frac{24}{11}$$

$$x = \frac{7}{11}$$

$$\text{Ans: } x = \frac{7}{11}$$

(iii) 16, 12 and 8

Solution:

Suppose the fourth proportional be 'x'

$$16 : 12 = 8 : x$$

$$16 : 12 = 8 : x$$

$$16x = 12 \times 8$$

$$\frac{16x}{16} = \frac{12 \times 8}{16}$$

$$x = 6$$

Fourth Proportion = 6 Ans

(iv) 76, 28 and 57

Solution:

Suppose the fourth proportional be 'x'

$$76 : 28 = 57 : x$$

$$76 : 28 = 57 : x$$

$$\frac{76x}{76} = \frac{28 \times 57}{76} = 21$$

$$x = 21$$

Fourth Proportion = 21 Ans

(v) 36, 45 and 4

Solution:

Suppose the fourth proportion be 'x'

$$36 : 45 = 4 : x$$

$$36 : 45 = 4 : x$$

$$36x = 45 \times 4$$

$$\frac{36x}{36} = \frac{45 \times 4}{36}$$

$$x = 5$$

Fourth proportion = 5 Ans.

(vi) 40, 30 and 24

Solution:

Suppose the fourth proportional be 'x'

$$40 : 30 = 24 : x$$

$$40 : 30 = 24 : x$$

$$40x = 24 \times 30$$

$$\frac{40x}{40} = \frac{24 \times 30}{40} = 18$$

$$x = 18$$

Fourth Proportion = 18 Ans

Q.5. Find the mean proportion in the following:

(i) 15 and 60

Solution:

Suppose the mean proportional be 'x'

$$15 : x :: x : 60$$

$$15 : x :: x : 60$$

$$15 \times 60 = x^2$$

$$\text{or } x^2 = 900$$

$$x^2 = 30^2$$

$$x = 30$$

Mean proportion = 30 Ans

(ii) 18 and 32

Solution:

Suppose the mean proportional be 'x'

$$18 : x :: x : 32$$

$$18 : x :: x : 32$$

$$18 \times 32 = x^2$$

$$\text{or } x^2 = 576$$

$$x^2 = 24^2$$

$$x = 24$$

Mean Proportion = 24 Ans

(iii) 28 and 63

Solution:

Suppose the mean proportional be 'x'

$$28 : x :: x : 63$$

$$28 : x :: x : 63$$

$$x^2 = 28 \times 63$$

$$x^2 = 1764$$

$$x^2 = 42^2$$

$$x = 42$$

Mean Proportion = 42 Ans

(iv) 27 and 12

Solution:

Suppose the mean proportional be 'x'

$$27 : x :: x : 12$$

$$27 : x :: x : 12$$

$$27 \times 12 = x^2$$

$$x^2 = 324$$

$$x^2 = 18^2$$

$$x = 18$$

Mean Proportion = 18 Ans

(v) 40 and 90

Solution:

Suppose the mean proportion be 'x'

$$40 : x :: x : 90$$

$$40 : x :: x : 90$$

$$40 \times 90 = x^2$$

$$x^2 = 60^2$$

$$x = 60$$

Mean Proportion = 66 Ans

(vi) 44 and 99

Solution:

Suppose the mean proportional be 'x'

$$44 : x :: x : 99$$

$$44 : x :: x : 99$$

$$44 \times 99 = x^2$$

$$x^2 = 4356$$

$$x^2 = 66^2$$

$$x = 66$$

Mean Proportion = 66 Ans

EXERCISE 6.3

Q.1 Ahmed secured 60 marks in a paper of 100 of 75 marks.

Solution:

Let the required marks be 'x'

Max marks	Secured Marks
100	60
75	x

$$100 : 60 :: 75 : x$$

$$100 : 60 :: 75 : x$$

$$\frac{100x}{100} = \frac{60 \times 75}{100} = 45$$

$$x = 45$$

Marks obtained = 45 Ans

Q.2 The weight $\frac{5}{9}$ of a piece of metal is 35 kg. What is the weight $\frac{2}{7}$ of the peice?

Solution:

Let the required weight be 'x'

$$\therefore \frac{5}{9} : 35 :: \frac{2}{7} : x$$

$$\frac{5}{9} : 35 :: \frac{2}{7} : x$$

$$\frac{5}{9} x = \frac{2}{7} \times 35$$

$$\frac{5}{9} x = 10$$

$$\frac{5}{9} x = \frac{9}{5} \times 10$$

$$x = 18$$

Required weight = 18kg Ans

Q.3 On a map, 80 km are represented by 5 cm. If the distance between two cities on the map is 15 cm. Find the actual distance between them.

Solution:

Let the required distance be 'x'

Distance (Km)	Distance (Cm)
80	5
x	15

$$5 : 15 :: 80 : x$$

$$5 : 15 :: 80 : x$$

$$\frac{5 : x}{5} = \frac{15 \times 80}{5} = 240$$

$$x = 240$$

Required Distance = 240km Ans

Q.4 If a dozen eggs costs Rs. 60. Find the cost of 32 egg.

Solution:

Let the required costs of eggs be 'x'

No. of eggs	Cost
12	60
32	x

$$12 : 32 :: 60 : x$$

$$12 : 32 :: 60 : x$$

$$12x = 32 \times 60$$

$$\frac{12x}{12} = \frac{32 \times 60}{12} = 160$$

$$x = 160$$

Cost of Eggs = 160 Rs. Ans

Q.5 Tabassum earns Rs. 42,000 in a month and spends Rs. 39,800. Find the ratio of her saving to her income also find the of expenditure to her income.

Solution:

Tabassum's Earning = Rs. 42,000

Tabassum's Expenditure = Rs. 39,800

Earning - Expenditure = Savings

$$42,000 - 39,800 = 2200$$

$$\begin{aligned} \text{Ratio between, income and saving} &= \frac{42000}{2200} \\ &= 11 : 210 \end{aligned}$$

$$\begin{aligned} \text{Ratio between income and expenditure} &= \frac{42000}{39800} \\ &= 199 : 210 \\ &= 11 : 210, 199 : 210 \quad \text{Ans} \end{aligned}$$

Q.6. If naved can read 45 pages of a book in 75 minuts. Find the time he takes to read the book of 876 pages.

Solution:

Let the required minute be 'x'

Pages	Time
45	75 minuts

876	x
-----	---

$$45 : 876 :: 75 : x$$

$$45 : 876 :: 75 : x$$

$$\frac{45x}{45} = \frac{876 \times 75}{45}$$

$$x = 1460$$

Required Time = 1460 minutes Ans

Q.7 A book covers 130 pages with 24 line on every page. If we make the same book of 90 pages with increasing numbers of lines. How many line would be there on each page?

Solution:

Let the required lines be 'x'

Pages	No. of Line
-------	-------------

130	3120
-----	------

90	x
----	---

$$90 : 130 :: 3120 : x$$

$$90x = \frac{130 \times 3120}{90} = 3510$$

$$x = 3510 \text{ line}$$

Number of line for each page $3510 \div 90 = 39$

= 39 lines Ans

Q.8 If 80 worker complete a wrok in 6 days. Find the number of days required to complete the same by 10 workers.

Solution:

Worker	Days
80	6
↓ 10	↑ x

$$10 : 80 :: 6 : x$$

$$10 : 80 :: 6 : x$$

$$\frac{10x}{10} = \frac{80 \times 6}{10} = 48$$

$$x = 48$$

Required Time = 48 Ans

REVIEW EXERCISE 6

Q.1 Find ratio in lowest form between the following.

(i) Length and breadth of your copy.

Solution

$$= 2 : 3 \quad \text{Ans}$$

(ii) Number of students present and absent in your class.

Solution

$$5 : 1 \quad \text{Ans}$$

(iii) Weight in kg of your two class mates.

Solution

$$= 30 : 20 \quad \text{Ans}$$

(iv) Number of pages of the text books of your class of maths english and social studies.

Solution

$$= 2 : 2 : 4 \quad \text{Ans}$$

(v) Number of pages of the text books of your class of math english and social studies.

Solution

$$= 5 : 3 : 2 \quad \text{Ans}$$

Q.2 Write equivalent ratio for

(i) $2 : 3 = \underline{4 : 6}$.

(ii) $10 : 8 = \underline{5 : 4}$.

(iii) $1 : 4 = \underline{2 : 8}$.

(iv) $21 : 35 = \underline{3 : 5}$.

Q.3 Find the value of x in each of the following.

(i) $2 : 5 :: x : 10$

Solution:

$$2 : 5 :: x : 10$$

$$2 : 5 :: x : 10$$

$$2 \times 10 = 5 \times x$$

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

$$x = 4 \quad \text{Ans}$$

(ii) $5 : x :: 10 : 14$

Solution:

$$5 : x :: 10 : 14$$

$$5 : x :: 10 : 14$$

$$x \times 10 = 5 \times 14$$

$$x = \frac{5 \times 14}{10}$$

$$x = 7 \quad \text{Ans}$$

(iii) $15 : 30 :: 1 : x$

Solution:

$$15 : 30 :: 1 : x$$

$$15 : 30 :: 1 : x$$

$$\frac{15 \times x}{15} = \frac{30 \times 1}{15}$$

$$x = 2 \quad \text{Ans}$$

(iv) $x : 12 :: 3 : 4$

Solution:

$$x : 12 :: 3 : 4$$

$$x : 12 :: 3 : 4$$

$$x : 4 = 12 : 3$$

$$\frac{x4}{4} = \frac{12 \times 3}{4} = 9$$
$$x = 9 \quad \text{Ans}$$

(v) $x : 200 :: 18 : 25$

Solution:

$$x : 200 :: 18 : 25$$

$$x : 200 :: 18 : 25$$

$$\frac{25}{25} = \frac{200 \times 18}{25} = 144$$
$$x = 144 \quad \text{Ans}$$

(vi) $132 : 216 :: 33 : x$

Solution:

$$132 : 216 :: 33 : x$$

$$132 : 216 :: 33 : x$$

$$\frac{132 \times x}{132} = \frac{296 \times 33}{132}$$
$$x = 9 \quad \text{Ans}$$

Q.4 Which of the following are inverse proportions?

- (i) The number of copies you buy and their total cost.
(Not inverse Proportion)
- (ii) The number of men doing a job and the time taken to finish it.
(Inverse Proportion)
- (iii) The amount of time taken in a journey and speed.
(Inverse Proportion)
- (iv) The number of boxes and the number of pencils packed in them.
(Not inverse Proportion)

Q.5 Out of 670 students in a school, 350 are boys and rest are girls. Find the ratio of

- (i) Boys to total students

Solution:

$$350 : 670$$
$$= (360 : 670) \div 10$$
$$= 35 : 67 \quad \text{Ans}$$

(ii) *Girls to total students*

Solution:

$$670 - 350 : 670 = (320 : 670) \div 10 \\ = 32 : 67 \quad \text{Ans}$$

(iii) *Girls to Boys of the students*

Solution:

$$320 : 350 = (320 : 350) \div 10 \\ = 32 : 35 \quad \text{Ans}$$

(iv) *Boys to Girls of the school*

Solution:

$$350 : 320 = (350 : 320) \div 10 \\ = 35 : 32 \quad \text{Ans}$$

Q.6 *Rehana can write 26 words in 2 minutes. How much time she will take to write 325 words.*

Solution:

Words	Time
26	2 min.
325	x

$$\therefore 26 : 325 :: 2 : x$$

$$\frac{26x}{26} = \frac{325 \times 2}{26} = 25$$

$$x = 25$$

Required time = 25 minutes Ans

Q.7 *12 litter milk costs Rs. 1200. What is the cost $13\frac{1}{2}$ liter milk?*

Solution:

Quantity of Milk	Cost/Rs
12	1200
$13\frac{1}{2}$	x

$$12 : x :: 1200 : \frac{27}{2}$$

$$1200x = 12 \times \frac{27}{2}$$

$$x \times 1200 = 162$$

$$x = \frac{162}{1200} = 0.135$$

$$\therefore x = 0.1350 \times 1000$$

$$x = 1350$$

Cost of milk = 1350 Rs. Ans

Q.8 24 metre high wall is made by 16 workers in a particular time. How many workers will construct a 18 meter high wall in the same time.

Solution:

Height	No. of workers
24 ↓ 18	16 ↓ x

$$24 : 18 :: 16 : x$$

$$\frac{24x}{24} = \frac{18 \times 16}{24}$$

$$x = 12$$

Number of workers = 12 Ans

Q.9 Food was stored for 600 person for 18 days. How many person will eat the same food in 27 days?

Solution:

No. of persons	Time
600 ↓ x	18 ↑ 27

$$27 : 18 :: 600 : x$$

$$\frac{27x}{27} = \frac{18 \times 600}{27} = 400$$

$$x = 400$$

Number of Persons = 400 Ans

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