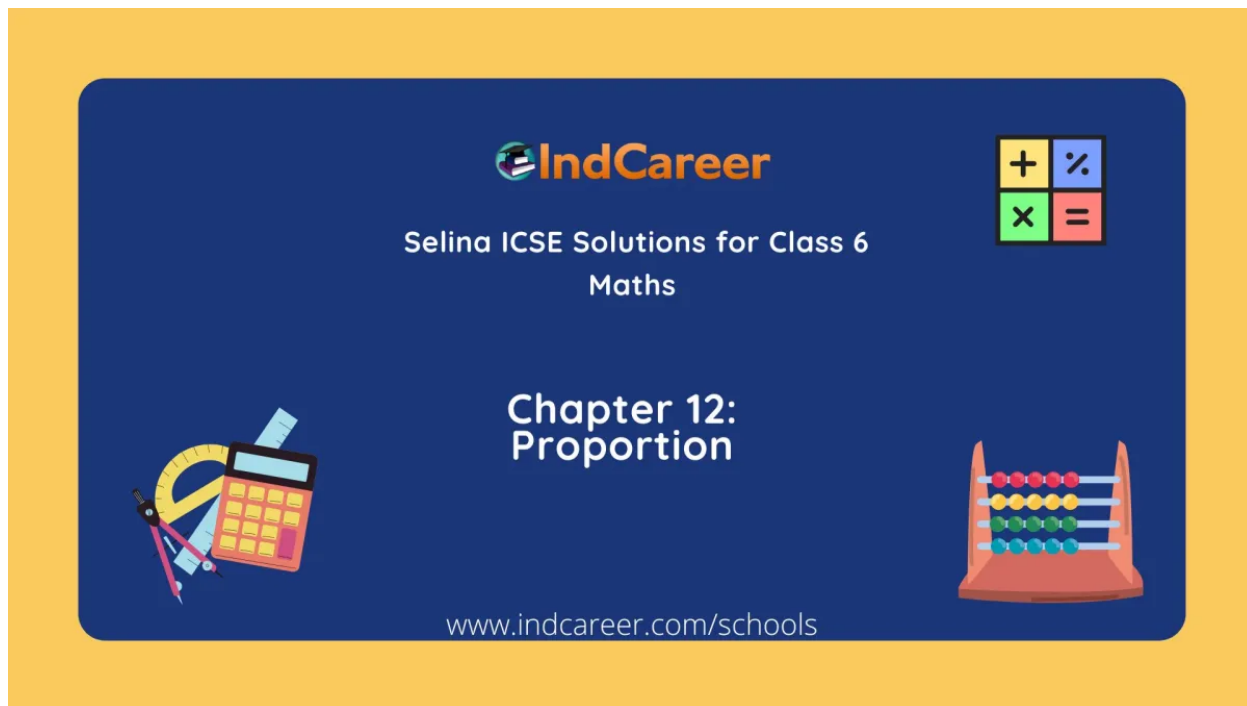


Selina Class 6 ICSE Solutions Mathematics : Chapter 12- Proportion



For any clarifications or questions you can write to **info@indcareer.com**

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Chapter 12- Proportion

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Selina Class 6 ICSE Solutions Mathematics : Chapter 12- Proportion

Selina 6th Maths Chapter 12, Class 6 Maths Chapter 12 solutions

Exercise 12(A)

1. In each of the following, check whether or not the given ratios form a proportion:

(i) 8: 16 and 12: 15

(ii) 16: 28 and 24: 42

(iii) $12 \div 3$ and $8 \div 2$

(iv) 25: 40 and 20: 32

(v) $15 / 18$ and $10 / 12$

Solution:

(i) 8: 16 and 12: 15

The above expression can be written as follows:

$$8: 16 = 8 / 16$$

$$= 1 / 2 \text{ and}$$

$$12: 15 = 12 / 15$$

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$$= 4 / 5$$

Since $8: 16 \neq 12: 15$

Therefore they are not in proportion

(ii) $16: 28$ and $24: 42$

The above expression can be written as follows:

$$16: 28 = 16 / 28$$

$$= 4 / 7 \text{ and}$$

$$24: 42 = 24 / 42$$

$$= 4 / 7$$

Since $16: 28 = 24: 42$

Therefore they form a proportion

(iii) $12 \div 3$ and $8 \div 2$

The above expression can be written as follows:

$$12 \div 3 = 12 / 3$$

$$= 4 \text{ and}$$

$$8 \div 2 = 8 / 2$$

$$= 4$$

Since $12: 3 = 8: 2$

Therefore they form a proportion

(iv) $25: 40$ and $20: 32$

The above expression can be written as follows:

$$25: 40 = 25 / 40$$

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$$= 5 / 8 \text{ and}$$

$$20: 32 = 20 / 32$$

$$= 5 / 8$$

Since $25: 40 = 20: 32$

Therefore they form a proportion

$$(v) 15 / 18 \text{ and } 10 / 12$$

$$15 / 18 = 5 / 6 \text{ and}$$

$$10 / 12 = 5 / 6$$

Since $15 / 18 = 10 / 12$

Therefore they form a proportion

2. Find the value of x in each of the following proportions:

$$(i) x: 4 = 6: 8$$

$$(ii) 14: x = 7: 9$$

$$(iii) 4: 6 = x: 18$$

$$(iv) 8: 10 = x: 25$$

$$(v) 5: 15 = 4: x$$

Solution:

$$(i) x: 4 = 6: 8$$

The given proportion can be calculated for the value of x as follows:

$$x: 4 = 6: 8$$

$$x / 4 = 6 / 8$$

$$\Rightarrow x \times 8 = 4 \times 6$$

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$$\Rightarrow x = (4 \times 6) / 8$$

$$\Rightarrow x = 3$$

Therefore the value of x is 3

(ii) $14: x = 7: 9$

The given proportion can be calculated for the value of x as follows:

$$14: x = 7: 9$$

$$14 / x = 7 / 9$$

$$\Rightarrow x \times 7 = 14 \times 9$$

$$\Rightarrow x = (14 \times 9) / 7$$

$$\Rightarrow x = 18$$

Therefore the value of x is 18

(iii) $4: 6 = x: 18$

The given proportion can be calculated for the value of x as follows:

$$4 / 6 = x / 18$$

$$\Rightarrow x \times 6 = 4 \times 18$$

$$\Rightarrow x = (4 \times 18) / 6$$

$$\Rightarrow x = 12$$

Therefore the value of x is 12

(iv) $8: 10 = x: 25$

The given proportion can be calculated for the value of x as follows:

$$8 / 10 = x / 25$$

$$\Rightarrow 10 \times x = 25 \times 8$$

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$$\Rightarrow x = (25 \times 8) / 10$$

$$\Rightarrow x = 20$$

Therefore the value of x is 20

(v) $5: 15 = 4: x$

The given proportion can be calculated for the value of x as follows:

$$5 / 15 = 4 / x$$

$$\Rightarrow 5 \times x = 15 \times 4$$

$$\Rightarrow x = (15 \times 4) / 5$$

$$\Rightarrow x = 12$$

Therefore the value of x is 12

3. Find the value of x so that the given four numbers are in proportion:

(i) x, 6, 10 and 15

(ii) x, 4, 15 and 30

(iii) 2, x, 10 and 25

(iv) 4, x, 6 and 18

(v) 9, 12, x and 8

Solution:

(i) x, 6, 10 and 15

The given proportion can be calculated for the value of x as follows:

$$x: 6: 10: 15$$

$$\Rightarrow x \times 15 = 6 \times 10$$

$$\Rightarrow x = (6 \times 10) / 15$$

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$$\Rightarrow x = 60 / 15$$

$$\Rightarrow x = 4$$

Therefore the value of x is 4

(ii) x, 4, 15 and 30

The given proportion can be calculated for the value of x as follows:

$$x: 4: 15: 30$$

$$\Rightarrow x \times 30 = 4 \times 15$$

$$\Rightarrow x = (4 \times 15) / 30$$

$$\Rightarrow x = 60 / 30$$

$$\Rightarrow x = 2$$

Therefore the value of x is 2

(iii) 2, x, 10 and 25

The given proportion can be calculated for the value of x as follows:

$$2: x: 10: 25$$

$$\Rightarrow x \times 10 = 2 \times 25$$

$$\Rightarrow x = (2 \times 25) / 10$$

$$\Rightarrow x = 50 / 10$$

$$\Rightarrow x = 5$$

Therefore the value of x is 5

(iv) 4, x, 6 and 18

The given proportion can be calculated for the value of x as follows:

$$4: x: 6: 18$$

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$$\Rightarrow x \times 6 = 18 \times 4$$

$$\Rightarrow x = (18 \times 4) / 6$$

$$\Rightarrow x = 72 / 6$$

$$\Rightarrow x = 12$$

Therefore the value of x is 12

(v) 9, 12, x and 8

The given proportion can be calculated for the value of x as follows:

$$9: 12: x: 8$$

$$\Rightarrow 12 \times x = 9 \times 8$$

$$\Rightarrow x = (9 \times 8) / 12$$

$$\Rightarrow x = 72 / 12$$

$$\Rightarrow x = 6$$

Therefore the value of x is 6

4. The first, second and the fourth terms of a proportion are 6, 18 and 75, respectively. Find its third term

Solution:

Given

First term = 6

Second term = 18

Fourth term = 75

Third term = ?

Let the third term be x

$$6: 18: x: 75$$

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$$\Rightarrow x \times 18 = 6 \times 75$$

$$\Rightarrow x = (6 \times 75) / 18$$

$$\Rightarrow x = 25$$

Therefore the value of third term is 25

5. Find the second term of the proportion whose first, third and fourth terms are 9, 8 and 24 respectively.

Solution:

Given

First term = 9

Third term = 8

Fourth term = 24

Second term = ?

Let the second term be x

9: x: 8: 24

$$\Rightarrow x \times 8 = 9 \times 24$$

$$\Rightarrow x = (9 \times 24) / 8$$

$$\Rightarrow x = 216 / 8$$

$$\Rightarrow x = 27$$

Therefore the value of x is 27

6. Find the fourth term of the proportion whose first, second and third terms are 18, 27 and 32 respectively.

Solution:

Given

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First term = 18

Second term = 27

Third term = 32

Fourth term = ?

Let the fourth term be x

18: 27: 32: x

$$\Rightarrow x \times 18 = 32 \times 27$$

$$\Rightarrow x = (32 \times 27) / 18$$

$$\Rightarrow x = 48$$

Therefore the value of x is 48

7. The ratio of the length and the width of a school ground is 5: 2. Find the length, if the width is 40 metres.

Solution:

Given

The ratio of the length and the width of a school ground = 5: 2

The width of the school ground = 40 metre

Let the length of the school ground be x metre

Hence the length of the ground can be calculated as follows:

Ratio of length to width of a school ground = x: 40

According to the given statement

$$5: 2 = x: 40$$

$$\Rightarrow 2 \times x = 40 \times 5$$

$$\Rightarrow x = (40 \times 5) / 2$$

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$$\Rightarrow x = 200 / 2$$

$$\Rightarrow x = 100 \text{ m}$$

Therefore the length of the school ground is 100 m

8. The ratio of the sale of eggs on a Sunday and that of the whole week at a grocery shop was 2: 9. If the total value of the sale of eggs in the same week was Rs 360, find the value of the sale of eggs that Sunday.

Solution:

Given

Ratio of sale of eggs on a Sunday and whole week at a grocery shop = 2: 9

Total sale of eggs in the same week = Rs 360

Let the sale of eggs on Sunday be x

Hence the sale of eggs on Sunday can be calculated as follows:

$$2: 9 = x: 360$$

$$\Rightarrow 9 \times x = 360 \times 2$$

$$\Rightarrow x = (360 \times 2) / 9$$

$$\Rightarrow x = 720 / 9$$

$$\Rightarrow x = 80$$

Therefore the value of the sale of eggs on Sunday is of Rs 80

9. The ratio of copper and zinc in an alloy is 9: 8. If the weight of zinc, in the alloy, is 9.6 kg, find the weight of copper in the alloy.

Solution:

Given

Ratio of copper and zinc in an alloy = 9: 8

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Weight of zinc in an alloy = 9.6 kg

Let x kg be the weight of copper in the alloy

Hence the weight of copper can be calculated as below

$$9: 8 = x: 9.6$$

$$\Rightarrow 8 \times x = 9 \times 9.6$$

$$\Rightarrow x = (9 \times 9.6) / 8$$

$$\Rightarrow x = 86.4 / 8$$

$$\Rightarrow x = 10.8$$

Therefore the weight of copper in the alloy is 10.8 kg

10. The ratio of the number of girls to the number of boys in a school is 2: 5. If the number of boys is 225; find:

(i) the number of girls in the school

(ii) the number of students in the school.

Solution:

Given

Ratio of girls to the boys in a school = 2.5

Number of boys in a school = 225

(i) Let x be the number of girls in a school

Hence number of girls in a school can be calculated as follows:

$$2: 5 = x: 225$$

$$\Rightarrow 5 \times x = 2 \times 225$$

$$\Rightarrow x = (2 \times 225) / 5$$

$$\Rightarrow x = 450 / 5$$

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$$\Rightarrow x = 90$$

Therefore the number of girls in the school is 90

(ii) Total number of students in a school becomes

Total student = Total boys + Total girls

$$= 225 + 90$$

$$= 315$$

Therefore total number of students in the school is 315

11. In a class 1 out of every 5 students pass. If there are 225 students in all the sections of a class, find how many pass?

Solution:

Given

Total number of students in all the sections of a class = 225

And 1 out of every 5 students pass

So, total number of pass students can be calculated as follows:

$$\text{Total student pass} = 225 \times 1 / 5$$

$$= 45$$

Therefore total pass students are 45

12. Make set of all possible proportions from the numbers 15, 18, 35 and 42

Solution:

Given

Numbers are 15, 18, 35 and 42

Hence the possible proportions are as follows:

(i) 15: 18:: 35: 42

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(ii) 15: 35:: 18: 42

(iii) 42: 18:: 35: 15

(iv) 42: 35:: 18: 15

Exercise 12(B)

1. If x, y and z are in continued proportion, then which of the following is true:

(i) $x: y = x: z$

(ii) $x: x = z: y$

(iii) $x: y = y: z$

(iv) $y: x = y: z$

Solution:

Here option (iii) is in continued proportion i.e. $x: y = y: z$

2. Which of the following numbers are in continued proportion:

(i) 3, 6 and 15

(ii) 15, 45 and 48

(iii) 6, 12 and 24

(iv) 12, 18 and 27

Solution:

Here options (iii) and (iv) are in continued proportion

(iii) $6 / 12 = 12 / 24$

$1 / 2 = 1 / 2$

(iv) $12 / 18 = 18 / 27$

$2 / 3 = 2 / 3$

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Therefore (iii) and (iv) are in continued proportion

3. Find the mean proportion between

(i) 3 and 27

(ii) 0.06 and 0.96

Solution:

(i) 3 and 27

The mean proportion between 3 and 27 can be calculated as below

$$\text{Mean proportion} = \sqrt{3 \times 27}$$

$$= \sqrt{81}$$

$$= 9$$

Therefore mean proportion between 3 and 27 is 9

(ii) 0.06 and 0.96

The mean proportion between 0.06 and 0.96 can be calculated as below

$$\text{Mean proportion} = \sqrt{0.06 \times 0.96}$$

$$= \sqrt{.0576}$$

$$= 0.24$$

Therefore the mean proportion between 0.06 and 0.96 is 0.24

4. Find the third proportional to:

(i) 36, 18

(ii) 5.25, 7

(iii) Rs 1. 60, Rs 0.40

Solution:

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(i) 36, 18

Let the required third proportional be x

Hence, 36, 18, x are in continued proportion

$$\Rightarrow 36: 18 = 18: x$$

$$\Rightarrow 36x = 18 \times 18$$

$$\Rightarrow x = (18 \times 18) / 36$$

$$\Rightarrow x = 324 / 36$$

$$\Rightarrow x = 9$$

Therefore the required third proportional is 9

(ii) 5.25, 7

Let the required third proportional be x

Hence 5.25, 7, x are in continued proportion

$$\Rightarrow 5.25: 7 = 7: x$$

$$\Rightarrow 5.25x = 7 \times 7$$

$$\Rightarrow x = (7 \times 7) / 5.25$$

$$\Rightarrow x = 49 / 5.25$$

$$\Rightarrow x = 28 / 3$$

$$\Rightarrow x =$$

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

Therefore the required third proportional is

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

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(iii) Rs 1.60, Rs 0.40

Let the required third proportional be x

Hence Rs 1.60, 0.40, x are in continued proportion

$$\Rightarrow 1.60 : 0.40 = 0.40 : x$$

$$\Rightarrow 1.60 \times x = 0.40 \times 0.40$$

$$\Rightarrow x = (0.40 \times 0.40) / 1.60$$

$$\Rightarrow x = 0.1$$

Therefore required third proportional is 0.1

5. The ratio between 7 and 5 is same as the ratio between Rs x and Rs 20.50; find the value of x

Solution:

Given

Ratio between 7 and 5 is same as the ratio between Rs x and Rs 20.50

Hence, the value of x can be calculated as below

$$7 : 5 = x : 20.50$$

$$5x = 7 \times 20.50$$

$$x = (7 \times 20.50) / 5$$

$$x = (143.5) / 5$$

$$x = 28.7$$

Therefore the value of x is 28.7

6. If $(4x + 3y) : (3x + 5y) = 6 : 7$, find:

(i) x : y

(ii) x, if y = 10

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(iii) y, if $x = 27$

Solution:

(i) x: y

Given

$$(4x + 3y) : (3x + 5y) = 6 : 7$$

We can calculate x: y as below

$$7(4x + 3y) = 6(3x + 5y)$$

$$28x + 21y = 18x + 30y$$

$$28x - 18x = 30y - 21y$$

$$10x = 9y$$

$$x / y = 9 / 10$$

Therefore x: y is 9: 10

(ii) x, if $y = 10$

Given

$$(4x + 3y) : (3x + 5y) = 6 : 7$$

And $y = 10$

Hence we can calculate x as below

$$7(4x + 3 \times 10) = 6(3x + 5 \times 10)$$

$$7(4x + 30) = 6(3x + 50)$$

$$28x + 210 = 18x + 300$$

$$28x - 18x = 300 - 210$$

$$10x = 90$$

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$$x = 90 / 10$$

$$x = 9$$

Therefore the value of x is 9

(iii) y, if x = 27

Given

$$(4x + 3y) : (3x + 5y) = 6 : 7$$

$$\text{And } x = 27$$

We can calculate x as below

$$7(4 \times 27 + 3y) = 6(3 \times 27 + 5y)$$

$$7(108 + 21y) = 6(81 + 5y)$$

$$756 + 21y = 486 + 30y$$

$$9y = 756 - 486$$

$$9y = 270$$

$$y = 270 / 9$$

$$y = 30$$

Therefore the value of y is 30

7. If $(2y + 5x) / (3y - 5x) =$, find:

(i) x: y

(ii) x, if y = 70

(iii) y, if x = 33

Solution:

(i) x: y

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Given

$$(2y + 5x) / (3y - 5x) =$$

$$2\frac{1}{2}$$

Hence x: y can be calculated as below

$$(2y + 5x) / (3y - 5x) =$$

$$2\frac{1}{2}$$

We get

$$(2y + 5x) / (3y - 5x) = 5 / 2$$

$$2 [(2y + 5x)] = 5[(3y - 5x)]$$

$$4y + 10x = 15y - 25x$$

$$25x + 10x = 15y - 4y$$

$$35x = 11y$$

$$x / y = 11 / 35$$

$$x: y = 11: 35$$

Therefore x: y is 11: 35

(ii) x, if y = 70

Given

$$(2y + 5x) / (3y - 5x) =$$

$$2\frac{1}{2}$$

And y = 70

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Hence x can be calculated as below

$$(2 \times 70 + 5x) / (3 \times 70 - 5x) =$$

$$2\frac{1}{2}$$

On calculating further, we get

$$(2 \times 70 + 5x) / (3 \times 70 - 5x) = 5 / 2$$

$$2 [140 + 5x] = 5 [210 - 5x]$$

$$280 + 10x = 1050 - 25x$$

$$25x + 10x = 1050 - 280$$

$$35x = 770$$

$$x = 770 / 35$$

$$x = 22$$

Therefore x is 22

(iii) y, if x = 33

Given

$$(2y + 5x) / (3y - 5x) =$$

$$2\frac{1}{2}$$

And x = 33

Hence y can be calculated as below

$$(2y + 5 \times 33) / (3y - 5 \times 33) =$$

$$2\frac{1}{2}$$

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$$(2y + 5 \times 33) / (3y - 5 \times 33) = 5 / 2$$

$$2 [(2y + 165)] = 5 [(3y - 165)]$$

$$4y + 330 = 15y - 825$$

$$11y = 1155$$

$$y = 1155 / 11$$

$$y = 105$$

Therefore y is 105

Exercise 12(C)

1. Are the following numbers in proportion:

(i) 32, 40, 48 and 60?

(ii) 12, 15, 18 and 20?

Solution:

(i) 32, 40, 48 and 60

Given

Numbers are 32, 40, 48 and 60

If $32:40 = 48:60$ then the ratios are in continued proportion

Hence we can find out as shown below

$$32:40 = 48:60$$

$$32 \times 60 = 40 \times 48$$

$$1920 = 1920$$

Since they are equal

Therefore they are in continued proportion

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(ii) 12, 15, 18 and 20

Given

Numbers are 12, 15, 18 and 20

If $12: 15 = 18: 20$ then the ratios are in continued proportion

Hence we can find out as shown below

$$12: 15 = 18: 20$$

$$12 \times 20 = 15 \times 18$$

$$240 = 270$$

$$240 \neq 270$$

Since they are not equal

Therefore they are not in a continued proportion

2. Find the value of x in each of the following such that the given numbers are in proportion

(i) 14, 42, x and 75

(ii) 45, 135, 90 and x

Solution:

(i) 14, 42, x and 75

Given

Numbers are 14, 42, x and 75

If $14: 42 = x: 75$ then they are in continued proportion

Hence we can find out as shown below

$$14: 42 = x: 75$$

$$14 \times 75 = x \times 42$$

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$$x = (14 \times 75) / 42$$

$$x = 1050 / 42$$

$$x = 25$$

Therefore the value of x is 25

(ii) 45, 135, 90 and x

Given

Numbers are 45, 135, 90 and x

If 45: 135 = 90: x then they are in continued proportion

Hence we can find out value of x as shown below

$$45: 135 = 90: x$$

$$45 \times x = 90 \times 135$$

$$x = (90 \times 135) / 45$$

$$x = 12150 / 45$$

$$x = 270$$

Therefore the value of x is 270

3. The costs of two articles are in the ratio 7: 4. If the cost of the first article is Rs 2800; find the cost of the second article

Solution:

Given

Costs of two articles are in the ratio = 7: 4

Cost of first article = Rs 2800

Let us assume the cost of second article be x

Hence the value of second article can be calculated as shown below

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$$7: 4 = 2800: x$$

$$7 / 4 = 2800 / x$$

$$7 \times x = 2800 \times 4$$

$$x = (2800 \times 4) / 7$$

$$x = 11200 / 7$$

$$x = 1600$$

Therefore the cost of second article is Rs 1600

4. The ratio of the length and the width of a rectangular sheet of paper is 8: 5. If the width of the sheet is 17.5 cm; find the length

Solution:

Given

Ratio of the length and the width of a rectangular sheet of paper = 8: 5

Width of the sheet = 17.5 cm

Hence the value of length can be calculated as shown below

$$8: 5 = x: 17.5$$

$$8 / 5 = x / 17.5$$

$$5 \times x = 8 \times 17.5$$

$$x = (8 \times 17.5) / 5$$

$$x = 140 / 5$$

$$x = 28$$

Therefore the length of sheet is 28 cm

5. The ages of A and B are in the ratio 6: 5. If A's age is 18 years, find the age of B.

Solution:

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Given

The ages of A and B are in the ratio = 6: 5

Age of A = 18 years

Let the age of B be x years

Hence the value of B's age can be calculated as shown below

$$6: 5 = 18: x$$

$$6 / 5 = 18 / x$$

$$6 \times x = 18 \times 5$$

$$x = (18 \times 5) / 6$$

$$x = 90 / 6$$

$$x = 15$$

Therefore the age of B is 15 years

6. A sum of Rs 10, 500 is divided among A, B and C in the ratio 5: 6: 4. Find the share of each.

Solution:

Given

Amount divided among A, B and C in the ratio = 5: 6: 4

Total amount divided = Rs 10500

Hence the sum of ratios can be calculated as below

$$\text{Sum of ratios} = 5 + 6 + 4$$

$$= 15$$

Hence the share's of A, B and C can be calculated as below

$$\text{A's share} = \text{Rs } (10500) / 15 \times 5$$

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$$= 700 \times 5$$

$$= \text{Rs } 3500$$

$$\text{B's share} = \text{Rs } (10500) / 15 \times 6$$

$$= 700 \times 6$$

$$= 4200$$

$$\text{C's share} = \text{Rs } (10500) / 15 \times 4$$

$$= 700 \times 4$$

$$= \text{Rs } 2800$$

Therefore the share of A, B and C are Rs 3500, Rs 4200 and Rs 2800

7. Do the ratios 15 cm to 2 m and 10 sec to 3 minutes form a proportion?

Solution:

Given

$$15 \text{ cm} : 2 \text{ m} :: 10 \text{ sec} : 3 \text{ min}$$

We know that,

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

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

$$\text{Hence } 2 \text{ m} = 200 \text{ cm}$$

$$3 \text{ min} = 180 \text{ sec}$$

We can check that they form the proportion or not as shown below:

$$15 : 200 :: 10 : 180$$

$$3 : 40 :: 1 : 180$$

Therefore they do not form the proportion

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8. Do the ratios 2 kg: 80 kg and 25 g: 625 g form a proportion?

Solution:

Given

2 kg: 80:: 25 g: 625 g

We can check that they form the proportion or not as shown below

2: 80:: 25: 625

1: 40:: 1: 25

Therefore they do not form the proportion

9. 10 kg sugar cost Rs 350. If x kg sugar of the same kind costs Rs 175, find the value of x

Solution:

Given

Cost of 10 kg sugar = Rs 350

Cost of x kg sugar = Rs 175

The value of x can be calculated as shown below

10 kg: x kg:: 350: 175

$10 \times 175 = 350 \times x$

$350 x = 1750$

$x = 1750 / 350$

$x = 5$

Therefore, 5 kg of sugar costs Rs 175

10. The length of two ropes are in the ratio 7: 5. Find the length of:

(i) shorter rope, if the longer one is 22.5 m

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(ii) longer rope, if the shorter is 9.8 m

Solution:

(i) shorter rope, if the longer one is 22.5 m

Given

Ratio of length of two rope = 7: 5

And longer rope = 22.5 m

Let the shorter rope length be x

Hence, length of shorter rope can be calculated as below

$$7: 5 = 22.5: x$$

$$7x = 22.5 \times 5$$

$$x = (22.5 \times 5) / 7$$

$$x = 112.5 / 7$$

$$x = 16.07 \text{ m}$$

Therefore the length of shorter rope is 16.07 m

(ii) longer rope, if the shorter is 9.8 m

Given

Ratio of length of two rope = 7: 5

And shorter rope = 9.8 m

Let the length of longer rope be x

Hence, the length of longer rope can be calculated as below

$$7: 5 = x: 9.8$$

$$5x = 9.8 \times 7$$

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$$x = (9.8 \times 7) / 5$$

$$x = 68.6 / 5$$

$$x = 13.72 \text{ m}$$

Therefore the length of longer rope is 13.72 m

11. If 4, x and 9 are in continued proportion, find the value of x

Solution:

Given

Numbers are 4, x and 9 are in continued proportion

Hence we can find out value of x as below

$$4: x = x: 9$$

$$x^2 = 9 \times 4$$

$$x = \sqrt{36}$$

$$x = 6$$

Therefore the value of x is 6

12. If 25, 35 and x are in continued proportion, find the value of x

Solution:

Given

Numbers are 25, 35 and x are in continued proportion

Hence we can find out value of x as below

$$25: 35 = 35: x$$

$$25 \times x = 35 \times 35$$

$$x = (35 \times 35) / 25$$

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$$x = 1225 / 25$$

$$x = 49$$

Therefore the value of x is 49



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