RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2: RS Aggarwal Solutions for Class 8 Maths Chapter 12, Exercise 12.2 provides detailed guidance on understanding and solving problems related to direct and inverse proportions.

By solving these solutions students can learn to set up proportion equations, solve for unknown values, and interpret results effectively. This exercise not only reinforces theoretical knowledge but also enhances problem-solving skills through diverse examples and detailed explanations.

RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2 Overview

RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2 focuses on practical problems involving direct and inverse proportions. This exercise aims to deepen students understanding of how changes in one quantity affect another when the relationship between them is either directly or inversely proportional.

The exercise includes a variety of problems that require setting up and solving proportion equations. For instance, students might be asked to determine how changing one variable impacts another in scenarios like speed, time, and distance, or quantities of ingredients needed for a recipe. The solutions provided help clarify the steps needed to identify whether quantities are in direct or inverse proportion, set up the correct equations, and solve them accurately.

By working through these problems, students gain valuable practice in applying the concepts of direct and inverse proportions to real-world situations, enhancing their problem-solving skills and reinforcing their understanding of these important mathematical relationships.

RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2 PDF

The PDF link for RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2 provides detailed solutions and explanations for various problems on direct and inverse proportions. This exercise aims to help students understand how to apply the concepts of direct and inverse proportions to solve practical problems.

By referring to this resource, students can enhance their comprehension of how changes in one quantity affect another and improve their problem-solving skills in mathematics.

RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2 PDF

RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2(Ex 12B)

RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2 are available below. This resource provide detailed solutions and explanations for problems related to Direct and Inverse Proportions.

(Question 1) Observe the tables given below and in each case find whether x and y are inversely proportional:

(i)

x	6	10	14	16
y	9	15	21	24

Solution: Clearly, we have:

$xy = 6 \times 9 \neq 10 \times 15 \neq 14 \times 21 \neq 16 \times 24$.

$\therefore$ x and y are not inversely proportional.

(ii)

x	5	9	15	3	45
y	18	10	6	30	2

Solution: Clearly, we have:

$xy = 5 \times 18 = 9 \times 10 = 15 \times 6 = 3 \times 30 = 45 \times 2 = 90$ = constant.

$\therefore$ x and y are inversely proportional.

(iii)

x	9	3	6	36
y	4	12	9	1

Solution: $xy = 9 \times 4 = 3 \times 12 = 36 \times 1 \neq 6 \times 9$.

$\therefore$ x and y are not inversely proportional.

(Question 2) If x and y are inversely proportional, find the values of x_1 , x_2, y_1 and y_2 in the table given below:

x	**8**	**x_1**	**16**	**x_2**	**80**

y	**y_1**	**4**	**5**	**2**	**y_2**

Solution: Since x and y are inversely proportional, we must have xy = constant.

$\therefore 8 \times y_1 = x_1 \times 4 = 16 \times 5 = x_2 \times 2 = 80 \times y_2$.

Now, $16 \times 5 = 8 \times y_1 \Rightarrow 8y_1 = 80 \Rightarrow y_1 = 10$.

$16 \times 5 = x_1 \times 4 \Rightarrow 4x_1 = 80 \Rightarrow x_1 = 20$.

$16 \times 5 = x_2 \times 2 \Rightarrow 2x_2 = 80 \Rightarrow x_2 = 40$.

$16 \times 5 = 80 \times y_2 \Rightarrow 80y_2 = 80 \Rightarrow y_2 = 1$.

$\therefore x_1 = 20$, $x_2 = 40$, $y_1 = 10$ and $y_2 = 1$.

(Question 3) If 35 men can reap a field in 8 days, in how many days can 20 men reap the same field?

Solution: Let the required time be x days.

Number of men	35	20
Time (In day)	8	x

Less men will be finish reap the field more days. So, it is case of inverse proportion.

$\therefore 35 \times 8 = 20 \times x$

$\Rightarrow 20x = 280$

$\Rightarrow x = 14$

$\therefore$ Required number of days =14.

(Question 4) 12 men can dig a pond in 8 days. How many men can dig it in 6 days.

Solution: Let the required number of men be x.

Number of men	12	x
Time (in days)	8	6

For finishing the work in less time, more workers will be needed. So it is case of inverse proportion.

∴ 12 × 8 = x × 6

⇒ 6x = 96

⇒ x = 16

∴ Required number of workers = 16.

(Question 5) 6 cows can graze a field in 28 days. How long would 14 cows take to graze the same field?

Solution: Let the required number of time be x days.

Number of cows	6	14
Time (In days)	28	x

For finish grazing with more cows take less time. So, it is case of inverse proportion.

∴ 6 × 28 = 14 × x

⇒ 14x = 168

⇒ x = 12

∴ Required number of days = 12 .

(Question 6) A car takes 5 hours to reach a destination by travelling at the speed of 60 km/hr. How long will it take when the car travels at the speed of 75 km/hr?

Solution: The car travel 5 hours at the speed 60 km/hr = (5 × 60) = 300 km.

Now, For 75 km traveled the car take 1 hour

$$\text{For, 1 km travelled the car take } \frac{1}{75} \text{ hour}$$

$$\therefore \text{For 300 km travelled the car take } \left(\frac{1}{75} \times 300\right) = 4 \; hours.$$

(Question 7) A factory requires 42 machines to produce a given number of articles in 56 days. How many machines would be required to produce the same number of articles in 48 days?

Solution: Let the required number of machine be x.

Number of machine	42	x
Time (in days)	56	48

∴ 42 ×56 = x × 48

⇒ 48x = 2352

⇒ x = 49

∴ Required number of machine is 49.

(Question 8) 7 taps of the same size fill a tank in 1 hour 36 minutes. How long will 8 taps of the same size take to fill the tank?

Solution: Let the required time be x minutes.

Here, 1 hour 36 minutes = 96 minutes

Number of taps	7	8
Time (in minutes)	96	x

For fill the tank more taps take less time. So, it is case of inverse proportion.

∴ 7 × 96 = 8 × x

⇒ 8x = 672

⇒ x = 84

∴ Required time to fill the tank be 8 taps = 84 minutes = 1 hour 24 minutes.

(Question 9) 8 taps of the same size fill a tank in 27 minutes. If two taps go out order, how long would the remaining taps take to fill the tank?

Solution: Let the required time be x minutes.

Number of taps	8	8 – 2 = 6
Time (in minutes)	27	x

Less tap take more time to fill the tank. So, it is case of inverse proportion.

∴ 8 × 27 = 6 × x

⇒ 6x = 216

⇒ x = 36

∴ Required time to fill the tank = 36 minutes.

(Question 10) A farmer has enough food to feed 28 animals in his cattle for 9 days. How long would food last, if there were 8 more animals in his cattle?

Solution: Let the required number of days be x.

Time (in days)	9	x
Number of animals	28	(28+8) = 36

More animals will have food for less time. So, it is case of inverse proportion.

∴ 9 × 28 = 36 × x

⇒ 36x = 252

⇒ x = 7

∴ Required number of days = 7.

(Question 11) A garrison of 900 men had food provisions for 42 days. However, a reinforcement of 500 men arrived. For how many days will the food last now?

Solution: Let the required time be x days.

Number of men	900	(900+500) = 1400
Time (in days)	42	x

More men will have food for less time. So, it is case of inverse proportion.

∴ 900 × 42 = 1400 × x

⇒ 1400x = 37800

⇒ 14x = 378

⇒ x = 27

∴ Required number of days = 27.

(Question 12) In a hostel, 75 students had food provision for 24 days. If 15 students leave the hostel, for how many days would the food provision last?

Solution: Let the required number of days be x.

Number of students	75	(75 – 15) = 60
Time (in days)	24	x

Less number of students will have food for more days. So, it is case of inverse proportion.

∴ 75 × 24 = 60 × x

⇒ 60x = 1800

⇒ 6x = 180

⇒ x = 30

∴ The required number of days = 30.

(Question 13) A school has 9 periods a day each of 40 minutes duration. How long would each period be, if the school has 8 periods a day, assuming the number of the school hours to be the same?

Solution: If duration of each period 40 minutes. Therefore, durations of 9 periods = (9 × 40) = 360 minutes

∴ Therefore required time of each periods if there are 8 periods in the school= (360 ÷ 8) = 45 minutes.

(Question 14) If x and y vary inversely and x = 15 when y = 6, find y when x = 9.

Solution: We can write,

xy = 15 × 6

⇒ 9y = 90

⇒ y = 10

(15) If x and y vary inversely and x = 18 when y = 8, find x when y = 16.

Solution: We can write,

xy = 18 × 8

⇒ 16x = 144

⇒ x = 9

Benefits of RS Aggarwal Solutions for Class 8 Maths Chapter 12 Exercise 12.2

- **Clear Explanations**: The solutions provide step-by-step explanations making complex concepts of direct and inverse proportions easier to understand for students.
- **Practice Problems**: By solving various types of problems in the exercise, students can reinforce their understanding of direct and inverse proportions and how they apply in real-world scenarios.
- **Conceptual Clarity**: The solutions help students grasp the fundamental principles of direct and inverse proportions, ensuring they can identify and solve similar problems independently.
- **Enhanced Problem-Solving Skills**: Regular practice with these solutions improves problem-solving skills, helping students approach and tackle mathematical challenges with confidence.
- **Error Correction**: The solutions guide students on common mistakes to avoid, helping them correct errors and avoid misconceptions.