

CBSE Class 8 Maths Notes Chapter 11: This chapter explains two important types of relationships between numbers: direct and inverse proportions. In direct proportion, when one number goes up, the other number also goes up at the same rate. For example, if you double the number of apples, you double the cost.

In inverse proportion, when one number goes up, the other number goes down. For example, if you divide a fixed amount of work among more people, each person does less work.

The chapter includes simple explanations, examples, and practice problems to help students understand and apply these concepts in everyday situations. These notes aim to make it easier to grasp how direct and inverse proportions work and how they can be used to solve different kinds of problems.

CBSE Class 8 Maths Notes Chapter 11 Direct and Inverse Proportions Overview

These notes are prepared by subject experts of Physics Wallah provide a detailed overview of CBSE Class 8 Maths Chapter 11 Direct and Inverse Proportions. The notes simplify the concepts of direct and inverse proportions, making it easier for students to understand how these relationships work.

Direct proportion is explained with examples where quantities increase or decrease together, while inverse proportion is illustrated through scenarios where one quantity goes up as the other goes down.

The notes include clear explanations, practical examples, and practice problems to help students grasp and apply these concepts effectively. This structured approach ensures a solid understanding of how to work with proportional relationships in various mathematical contexts.

CBSE Class 8 Maths Notes Chapter 11 Direct and Inverse Proportions PDF

The PDF link for CBSE Class 8 Maths Chapter 11 Direct and Inverse Proportions is available below. This PDF provides a detailed overview of the chapter, including explanations of direct and inverse proportions, practical examples, and practice problems.

It is designed to help students easily understand and apply these concepts. Click the link below to access the PDF and enhance your learning experience with detailed notes.

CBSE Class 8 Maths Notes Chapter 11 Direct and Inverse Proportions PDF

CBSE Class 8 Maths Notes Chapter 11 Direct and Inverse Proportions

Here are the notes that are important for Class 11 students: CBSE Class 8 Maths Notes Chapter 11 Direct and Inverse Proportions.

These notes provide a solid foundation for understanding how quantities relate to each other, a concept that is crucial not only in Class 8 but also as you advance to higher classes. By mastering these basics, you will be better prepared for the more complex mathematical concepts you'll encounter in Class 11 and beyond.

Inverse Proportions

If the value of variable x decreases or increases as the value of variable y changes in the opposite direction, then we can say that variables x and y are in inverse proportion.

For example, consider a scenario where the variable y represents the time taken (in minutes) and the variable x represents the speed (in km/hour).

As the speed increases, the time taken decreases proportionally, and vice versa. This means that as one variable goes up, the other goes down, which is a characteristic of inverse proportion. In this case, the time taken and speed are inversely related.

	Walking	Running	Cycling	By car
Speed in km hour	3	6	9	45
Time taken (in minutes)	30	30	30	30

Relation for Inverse Proportion

Considering two variables x and y ,
 $xy=k$ or $x=\frac{k}{y}$ establishes the relation for inverse proportionality between x and y , where k is a constant.

So if x and y are in inverse proportion, it can be said that $x_1 y_1 = x_2 y_2$ where y_1 and y_2 are corresponding values of variables x_1 and x_2

Time and Work

In time and work problems, understanding how the time taken to complete a task relates to the amount of work done is crucial. When the time required to finish a task increases as the amount of work increases, the relationship is direct, meaning that more work takes more time.

Conversely, if the time decreases as the amount of work increases, the relationship is inverse, indicating that less time is needed to complete more work. This inverse relationship highlights how increased efficiency or additional resources can reduce the time required to accomplish a task. Recognizing these patterns allows for effective problem-solving in scenarios where time and work are interdependent.

For example: In the table below, we have the number of students (x) that took a certain number of days (y) to complete a fixed amount of food supplies. Now we have to calculate the number of days it would take for an increased number of students to finish the identical amount of food.

Number of students	100	125
Number of days	20	y

We know that with greater number of people, the time taken to complete the food will be lesser, therefore we have an inverse proportionality relation between x and y here.

Hence by applying the formula, we have:

$$100 \times 20 = 125 \times y \Rightarrow y = \frac{100 \times 20}{125} = 16 \text{ days}$$

Introduction to Direct Proportions

Direct Proportion

Direct proportion occurs when one variable always increases or decreases in direct relation to changes in another variable. In other words, if the value of variable x consistently rises or falls as variable y rises or falls, then x and y are said to be in direct proportion.

For example, consider the relationship between the cost and the weight of sugar. As the weight of sugar (in kg) increases, the cost (in Rs) also increases. Conversely, if the weight of sugar decreases, the cost will decrease accordingly. This consistent, proportional change in one variable with respect to the other indicates that the two variables are in direct proportion.

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Weight of sugar (in kg)	1	3	5	6	8	10
Cost (in Rs)	18	54	90

Relation for Direct Proportion

In direct proportion, when one variable increases or decreases, the other variable changes in the same direction at a consistent rate. The relationship between the two variables is such that their ratio remains constant.

This means that if you double one variable, the other variable will also double. If you halve one, the other will halve as well. This consistent relationship is what defines direct proportion.

For example, if the amount of sugar you buy increases, the cost will increase in the same proportion, maintaining the same cost per kilogram. This kind of relationship is common in many real-world situations where two quantities are directly linked.

Benefits of CBSE Class 8 Maths Notes Chapter 11 Direct and Inverse Proportions

Clear Conceptual Understanding: The notes provide detailed explanations of direct and inverse proportions, helping students grasp these fundamental concepts easily.

Simplified Explanations: Complex topics are broken down into simple, understandable language, making it easier for students to learn and retain information.

Illustrative Examples: Numerous examples are included to demonstrate how direct and inverse proportions are applied in real-life situations, enhancing practical understanding.

Step-by-Step Problem Solving: The notes include step-by-step solutions to various problems, teaching students effective methods to approach and solve different types of questions.

Quick Revision Tool: The concise and well-organized format makes these notes an excellent tool for quick revision before tests and exams.

Enhanced Exam Preparation: Important formulas, definitions, and concepts are highlighted, aiding students in preparing effectively for examinations.