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Direct and Inverse Proportion

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Learning objectives

- To recall the concept of ratio and proportion.
- To understand the concept of direct and inverse proportion.
- To be able to differentiate direct proportion and inverse proportion.
- To solve application problems using direct and inverse proportion.



Recap

Ratio and Proportion

In class VI we have learnt ratio and proportion. Let us recall them now.

Ratio is the comparison of two quantities of the same kind. If the quantity 'a' is compared with the quantity 'b', the ratio can be written in the form $a : b$ (read as a is to b)

When two ratios $a : b$ and $c : d$ are equal then we say that the ratios are in proportion. This is denoted as $a : b :: c : d$ and it is read as ' a is to b is as c is to d '. In $a : b :: c : d$, product of the means is equal to product of the extremes, that is $bc = ad$.



Try these

- Find the ratio of the number of circles to number of squares.



- Find the ratio (i) 555 g to 5 kg (ii) 21 km to 175 m
- Find the value of ' x ' in the following proportions.
(i) $110 : x :: 8 : 88$ (ii) $x : 26 :: 5 : 65$

4.1 Introduction

We come across many situations in day-to-day life where we see a change in one quantity brings a change in the other quantity. Let us learn more about the concept of variation that helps us to handle situations efficiently.

Now, let us consider such situations which we come across in every day life.

We consider the task of cleaning a school,

- when **more** number of students are involved, the time taken to clean will be **less**.
- when the number of students are **more**, the work done will also be **more**.

In the first case, number of students is compared with time taken and in the second case, the number of students is compared with the amount of work. The quantities taken for comparison decides the type of variation.