

Study Guide

Joint and combined variation

02/29/2012

Joint and Combined Variation

Variation equations are formulas that show how one quantity changes in relation to one or more quantities. There are four types of variation: direct, indirect (or inverse), joint, and combined. This skill focuses on joint and combined variation.

Direct variation equations show a relationship between two quantities such that when one quantity increases, the other also increases, and vice versa. We can say that y varies directly as x . Direct variation formulas are of the form $y = kx$, where the number represented by k does not change and is called a constant of variation. For example, the amount of money in a paycheck (P) varies directly as the number of hours (h) worked. In this case, the constant k is the hourly wage, and the formula is written $P = kh$.

Indirect variation formulas show that when one quantity increases, the other quantity decreases, and vice versa. For example, when the price of an item increases, the demand decreases. Indirect variation

An activity that can help reinforce the concept of variation is to describe situations involving joint and combined variation, and then have the student write the equations relating the quantities. For example, "The volume of a cylinder varies jointly as the square of the radius of the cylinder and its height." The student would write: