Identify the independent and dependent variables. Write a rule in function notation for each situation.

Definition

There are quantities that are in process remain the same value, they are called constant. A constant value is an actual numeric value or a specific character string whose value does not change. Generally constants indicate the first letters of the Latin alphabet a, b, c, d. The values are in the process of change called variables, they indicate x, y, z.

It happens that one variable depends on the other, each value corresponds to the value of one variable on the other. If two variables are related to each other in such a way that each value of one of them corresponds to a certain value of another, between such variables there is a functional dependency. In condition when the two variables are a function, the value of which may be arbitrary permissible values is called the independent variable or argument. Another quantity, the value of which depends on the value of the argument (independent variable) is dependent variables or function. Mathematically functional dependency is the ratio of (compliance with) f between the sets of x and y, in which each element of $x \in X$ corresponds to a single element $y \in Y$. Written in the following way $y = f(x)$. Set of X is called the domain of the function and denote $D(f)$ and the set $\{f(x)\} \in Y$ - the area or set of values and indicate$E(f)$. Variable $x \in D(f)$is called the independent variable and $y \in E(f)$ - dependent variable.

The function can be defined by the formula, which shows how the given value argument to calculate the corresponding value of the function. This is an analytical way of defining functions. As an example, consider the dependence of the volume of the cube - $V$of the length of its edge a and is expressed by the following formula$V = a^3$. Represent the functional dependence - $V = f(a)$. This formula shows how each value of a can be calculated and the corresponding value of V. For example put a equal 3, $V = f(3), V = 27$. Changing the length of the edge shows how to change the volume of a cube.

Depending on what the formula is expressed this or that functions, distinguish different types of functions. There are also a way to set a table and graphical functions.