FUNCTION IN MATHEMATICS - DEFINITION, PROPERTIES AND EXAMPLES WITH SOLUTION

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ANNOTATION

The study of the properties of functions and their graphs takes a significant place both in school mathematics and in subsequent courses. Moreover, not only in the courses of mathematical and functional analysis, and even not only in other sections of higher mathematics, but also in most narrowly professional subjects. The following article is devoted to mathematical functions and their properties.

Key words: function, property, numeric function, argument, scope, range.

The basic elementary functions, their inherent properties and the corresponding graphs are one of the basics of mathematical knowledge, similar in importance to the multiplication table. Elementary functions are the basis for the study of all theoretical issues. The article below provides key material on the topic of basic elementary functions. We will introduce terms, define them; we will study in detail each type of elementary functions, we will analyze their properties. There are the following types of basic elementary functions: Definition 1 constant function (constant); root of the nth degree; power function; exponential function; logarithmic function; trigonometric functions; fraternal trigonometric functions.

Function is one of the most important concepts of mathematics, it makes it possible to explore and model not only states, but also processes. The study of processes and phenomena using functions is one of the main methods of modern science. You will study functions in all subsequent grades and in higher education. A function is a correspondence between elements of two sets, established according to such a rule that each element of the first set corresponds to one and only one element of the second set.

In various processes that occur in nature, you can see how some quantities change depending on others. For example, the path traveled by a pedestrian depends on the time, the purchase price depends on its quantity. Way and time, cost and quantity,

variables. One of these values is independent, the other changes depending on the first. So, time is an independent variable, the path is a value dependent on time, the amount of purchased goods is an independent value, the purchase price depends on the quantity. It is clear that each of the variable quantities belongs to a certain set.

If each element x from the set X, according to a certain rule, is assigned a specific and unique value y from the set Y, then such a correspondence is called a function. Here x is called the independent variable or argument, and y is called the dependent variable or function. Usually a function is denoted as *f*.

The set of values that an argument can take is called the domain of definition and is usually denoted as *D(f)*. The set of values that a function can take for given values of a variable is called the set of values of a function (range of values) and is usually denoted *E(f)* .Detailed function explanation:

Recall that the dependence of a variable A function in mathematics is a definition, properties and examples with a solution on a variable A function in mathematics - a definition, properties and examples with a solution is called a function if each value of a Function in mathematics is a definition, properties and examples with a solution has a single value Function in mathematics - definition, properties and examples with a solution.

In the course of algebra and the beginnings of analysis, the definition of a number function is used.

A numerical function with a domain of definition D is a dependence in which each number *x* with a solution from the set D is associated with a single number *y*.

Numeric function concept:

A numerical function with a domain of definition *D* with a solution is a dependence in which each number *x* with a solution from a set *D*, properties and examples with a solution (domains of definition) is associated with a single number *y*.

This correspondence is written as follows:

$y = f(x)$

Designations and terms:

D(f) - scope

$E(f)$ - range

x - argument (explanatory variable)

y - function (dependent variable)

f - function

$f(x_0)$ - the value of a function f at a point $f(x_0)$.