## FUNCTION AS ONE OF THE FUNDAMENTAL CONCEPTS AT SECONDARY SCHOOL MATHEMATICS

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## Interesting Facts



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## Purpose

to investigate the role and place of function at secondary school mathematics

## Tasks

-the concept of function
-function types
-pedagogical recommendations for the study of functions in school mathematics course

## Problem


V.S.

Vladimirov
(1923-2012)

L.S.

Pontryagin (1908-1988)

A. N. Tikhonov (1947-2016)

## Reasons

-the absence of interest among schoolchildren to the subject and the study of functions in particular
-the study of every new type of function, the properties of the function, in fact, without connection with the previous one
-the gap between the computational and functional-graphic skills of students


## Definition of Function



Gottfried Wilhelm Leibniz (1646-1716)


Laurent-Moise Schwartz
(1915-2002)

## Function Types

- elementary: $y=f(x)$
$\cdot$ non-elementary: $y(x)=\left\{\begin{array}{c}0, \text { if } x-\text { irrational number }, \\ 1, \text { if } x-\text { rational number }\end{array}\right.$



## The Pedagogical Recommendation

-Concept of function snoula de a leaaing roie at scnool mathematics course

## The definition of Function

## Merzlyak A.G. Algebra. 7 grade Mordkovich A.G. Algebra. 9 grade

-The rule by which, for each value of olf a numerical set $X$ and a rule $f$ are the independent variable, one can given that allow each element $x$ from find the only value of the dependent the set $X$ to be associated with a variable is called a function, and the certain number $y$, then we say that a corresponding dependence of one function $y=f(x)$ with domain $X$ is variable on another is called a given; write $y=f(x), x \in X$. functional. Denoted as $y=f(x)$.

## The Concept of Function



## Conclusion

the main task of the teacher is to form the concept of function in each student's mind

## Interesting Facts


-The answer: for figures with the same perimeters, the area will be larger for the figure with the smallest angle. Perimeter is the sum of the lengths of all sides of a figure

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