

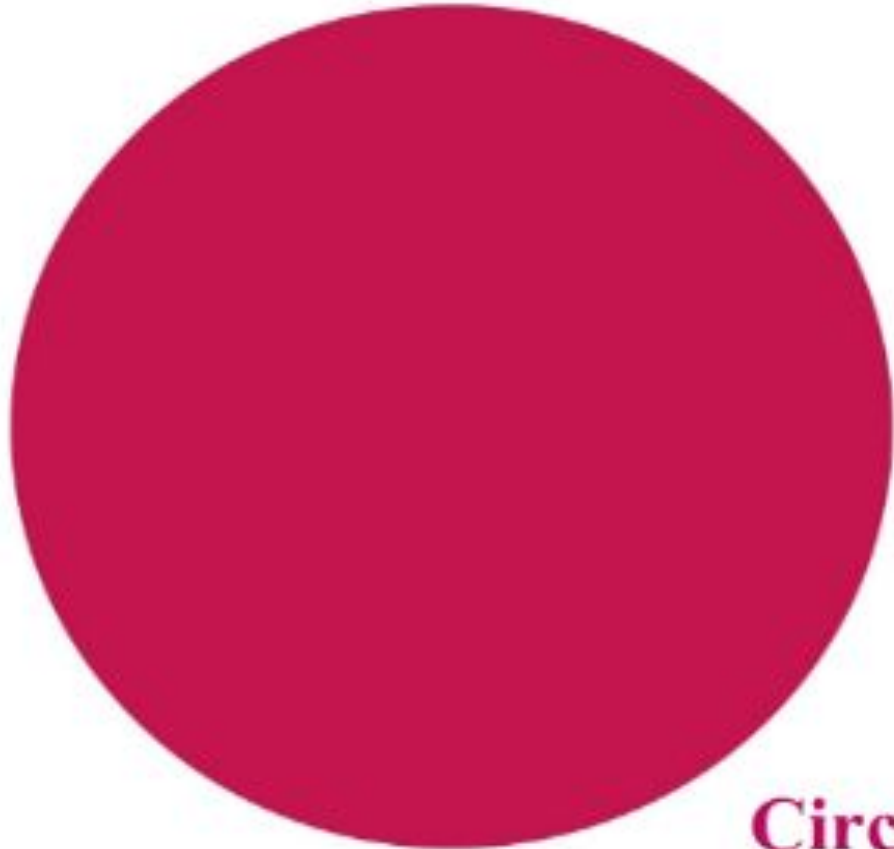
FUNCTION AS ONE OF THE FUNDAMENTAL CONCEPTS AT SECONDARY SCHOOL MATHEMATICS

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Interesting Facts



Circle



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



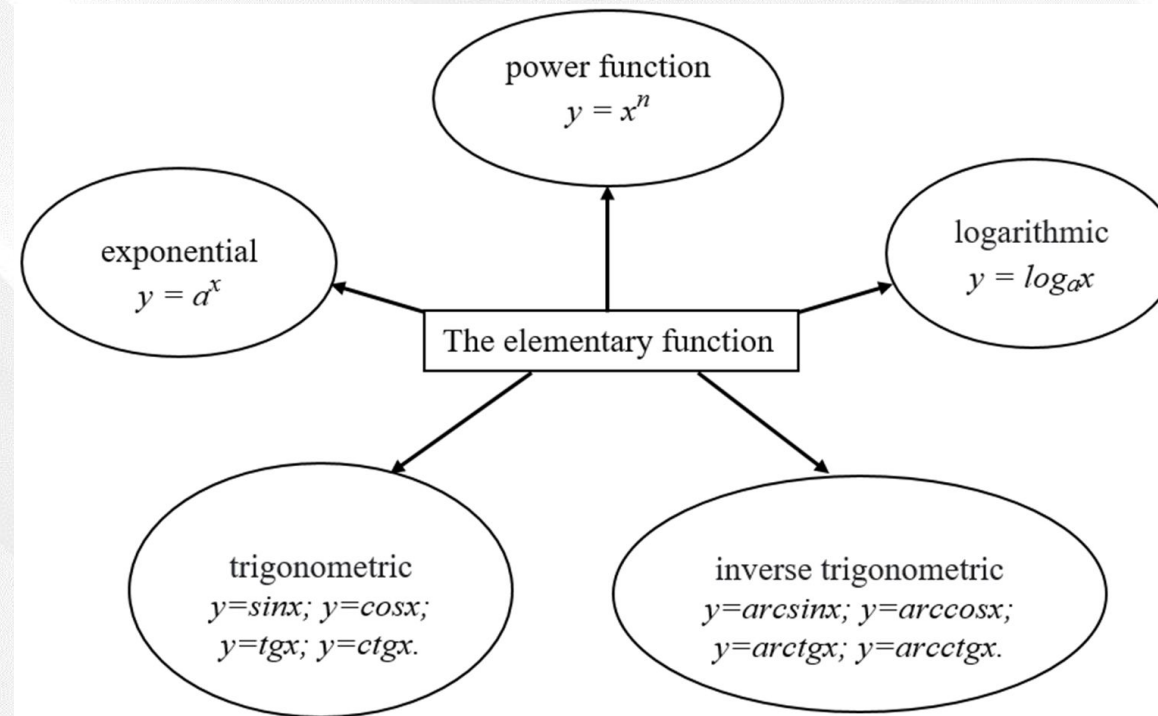
Gottfried Wilhelm Leibniz
(1646-1716)



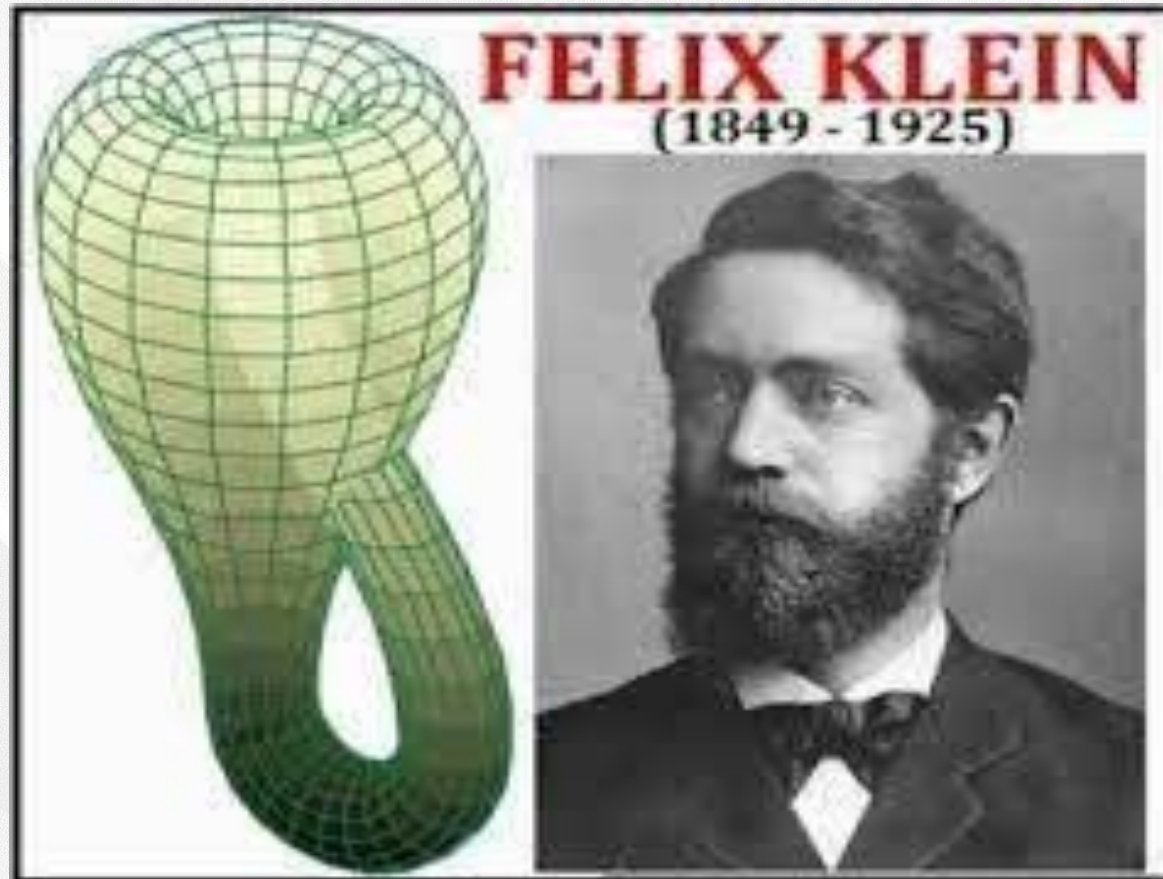
Laurent-Moise Schwartz
(1915-2002)

Function Types

- **elementary:** $y = f(x)$
- **non-elementary:** $y(x) = \begin{cases} 0, & \text{if } x - \text{irrational number,} \\ 1, & \text{if } x - \text{rational number} \end{cases}$



The Pedagogical Recommendation

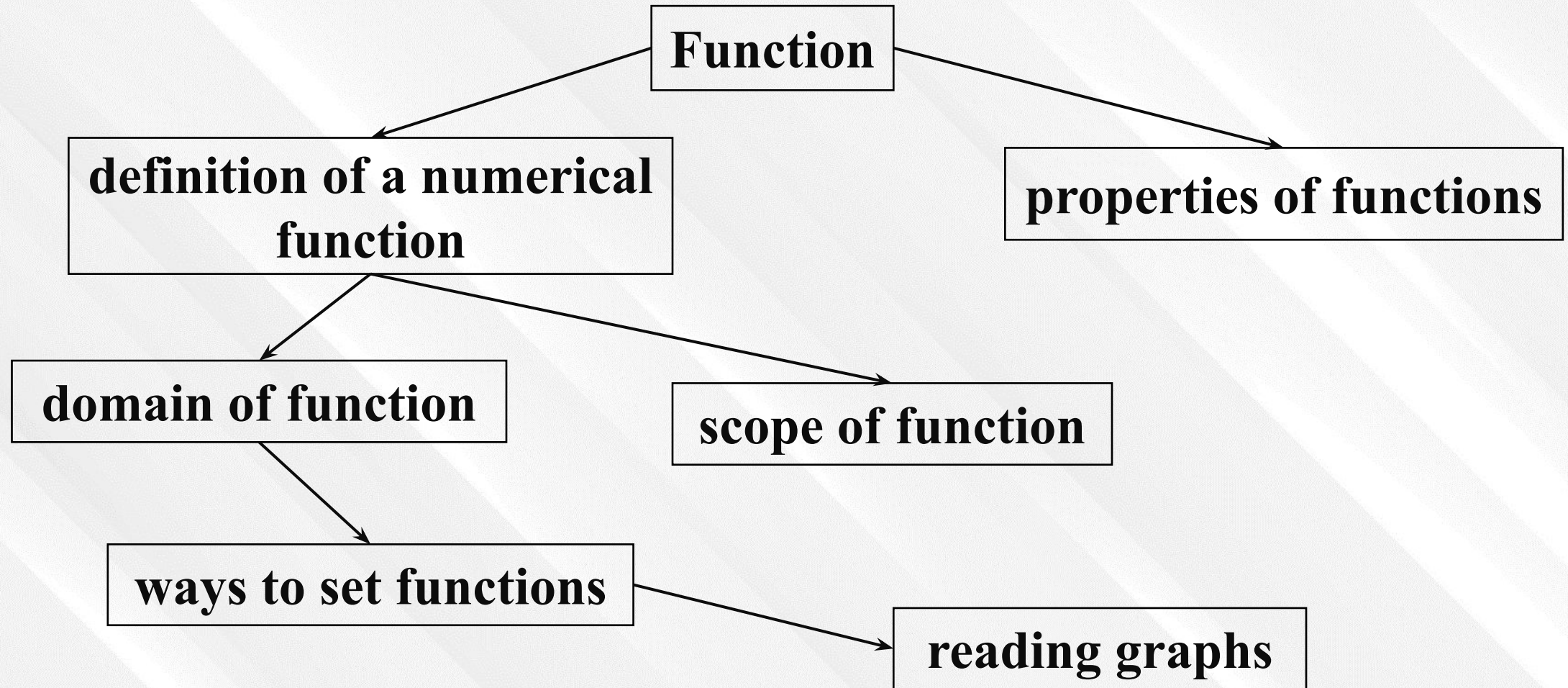


- **Concept of function should be a leading role at school mathematics course**

The definition of Function

Merzlyak A.G. Algebra. 7 grade	Mordkovich A.G. Algebra. 9 grade
<ul style="list-style-type: none">• The rule by which, for each value of the independent variable, one can find the only value of the dependent variable is called a function, and the corresponding dependence of one variable on another is called a functional. Denoted as $y=f(x)$.	<ul style="list-style-type: none">• If a numerical set X and a rule f are given that allow each element x from the set X to be associated with a certain number y, then we say that a function $y=f(x)$ with domain X is given; write $y=f(x), x \in X$.

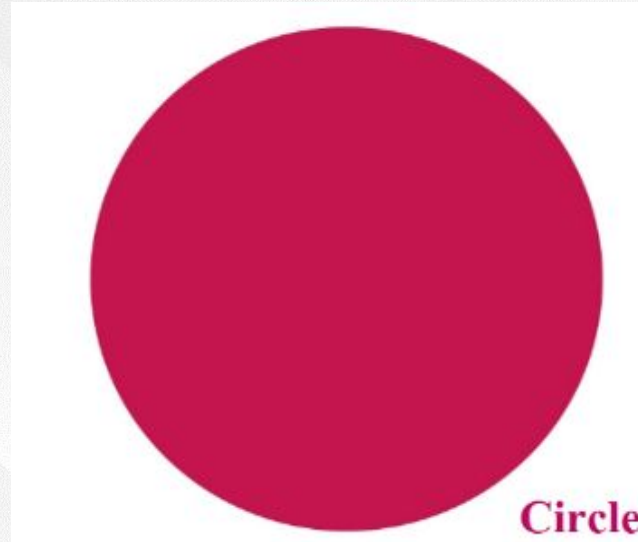
The Concept of Function



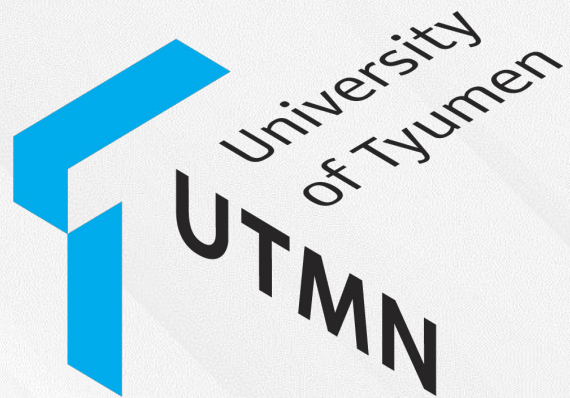
Conclusion

- **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**



THANK YOU FOR YOUR ATTENTION

