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MATHEMATICAL CONCEPTS

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Abstract: This article presents the recommendations of scientific research on mathematical concepts. Also, in the article, the scientific proposal and practical recommendations formed by the author on this issue were also expressed.

Keywords: Geometric, property, quantity, functional, triangle, equation, square.

Mathematics, like all sciences, studies all the processes that occur in the whole being. From this, it is natural to conclude that there is a mathematical expression for this process. For example, the level of student learning, the flight of an airplane, the movement of a student, air temperature, and various economic issues are studied through special equations. In particular, geometry, a branch of mathematics, investigates and teaches the geometrical properties of objects, regardless of their color, weight, or density.

A concept is the result of differentiating or generalizing rredmets and phenomena according to some important features. For example, "number", "quantity", "section", "straight line" and so on.

A symptom (sign) is a property that indicates the similarity, equality or difference of rredmet or events. For example, the sign of equilateral division of a triangle can be expressed as follows: "If the medians passed through the vertices of the base of the triangle are equal to each other, then this triangle is equilateral." Resources mean objects. Generally, objects have certain critical and non-critical properties. An important property refers to properties that belong only to this object and without which the object cannot exist. For example, for an arbitrary triangle, the property "the middle line of the triangle is parallel to the base and equal to half of it" is an important property.

Properties that do not affect the existence of an object are non-essential properties. For example, for the equation $2 \cdot x = 4$, the property that says "if we divide both sides of the equation by the same number, the result does not change" is an unimportant property.

If there are properties of an object to know what it means, then this object is said to have a "concept". The concept is named, it also has content and size.

All the important properties of the object together form the content of the concept. A rich network of objects with the same important properties constitutes a conceptual volume. So, the volume of the concept is also a network of rich objects that can be named by one concept. For example, the concept of "triangle" is general for the concept of "right-angled triangle", and the concept of "right-angled triangle" is a special case of the concept of "triangle".

Concepts arise as a result of summarizing the great experience of humanity and reflect the essence of the material world, but they are formed as a result of their idealization, ignoring the visible properties of real objects.

Showing the properties of an object that are sufficient to know it is called defining the concept.

Let's get acquainted with simple and complex considerations. A person perceives nature and makes various connections between objects. These connections are expressed through reasoning using concepts. For example, "In a rectangle, all angles are equal", "36 is divisible by three",

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"Rain and trees", "Uzbekistan gained independence on the first day of September 1991", " 2003 - Year of Prosperous Neighborhood", "2004 - Year of Compassion", "2009 - Year of Rural Development and Prosperity". Each reasoning is characterized by its content and logical structure. Simple and complex concepts are learned in mathematics. For example: "36 is divisible by 3" reasoning is simple. Examples of complex considerations are that 21 is odd and divisible by 7, or a is equal to or greater than 3, or the second stage of the National Personnel Training Program is the quality stage, etc.

Complex statements are made using simple statements using the words "and", "or". These words are called logical conjunctions in mathematics.

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