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CONCEPT OF COLLECTION. EMPTY AND PARTIAL SETS

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Abstract

This article describes in detail the concept of a set, which is considered one of the unique elements of mathematics.

Key words

Mathematical concept, objects, straight line, integers, natural numbers, squares, etc.

A set is one of the most important mathematical concepts. This concept was introduced to the science of mathematics by the German mathematician Georg Cantor (1845-1918), who was the founder of the theory of sets. For example, a collection of regions in Uzbekistan; a collection of academic lyceums in the province; set of integers; the set of points on the cross section of a straight line; a set of students in a class, etc. Objects that make up a set are called its elements. Some things that occur in life are used in the collection. For example, "gathering", "herd", "collection" and others are among them. A set and its element. Finite and infinite sets: In mathematics, it is often necessary to treat groups of objects as a single whole: numbers from 1 to 10, single-digit numbers, triangles, squares, and so on. Such different sets are called sets. The concept of a set is one of the fundamental concepts of mathematics, and therefore it cannot be defined by other concepts. It can be explained with the help of examples. For example, we can talk about a set of students in a class, about a set of natural numbers. In some cases, sets are designated by the letters A, B, C..., Z, of the Latin alphabet. A set that does not contain any objects is called an empty set. Objects that make up a set are called its elements. It is accepted to designate the elements of the set with lowercase letters of the Latin alphabet a, b, c..., z. We define that elements in a set belong to this set as follows. The element A=(a,b,c,…,z) belongs to the set. If an element does not belong to a collection. Then b is used. M: Let A= {1, a, b, c 4}, then the following are valid: 1A, aA, bA, cA, 4A, 5 b A, dbA, kbA. If the elements of a set can be counted, such a set is called a finite set. If they are uncountable, such a set is called an infinite set. For example, the set of days of the week is finite, and the set of points on a straight line is infinite. In mathematics, a special notation is adopted for such sets: the letter N denotes the set of natural numbers, Z is the set of integers, Q is the set of rational numbers, R is the set of real numbers. Its equivalent sets are infinite sets. A set of points on an arbitrary small cross section is equivalent to a cantineum power set. If we draw straight lines through the center of the circle, several points of the circle are reflected to one point of the straight line. In this reflection, the set of points of a circle is the reflection of the set of points of a straight line, and these sets are catenium power sets. That is, it is an infinite set. Given two sets A and B, let's match each element x of set A with element y of set B according to some rule f. Then this rule is called the mapping of set

A to set B. It is defined as follows. f: AkB or AB A set is defined by its elements, that is, if an arbitrary object can be said to belong to a set or not, then this set is given.

A set can be given by enumerating all its elements. For example, if we say that set A consists of the numbers 3, 4, 5, and 6, we have given this set because all its elements have been enumerated. It can be written like this: A={3, 4, 5, 6} where the enumerated elements are written in big brackets. A characteristic property is a property such that every element that belongs to a set has that property and no element that does not belong to it does. For example, consider the set of two-digit numbers A. An optional element of this set has the property of being a two-digit number. This characteristic property makes it possible to solve the question of whether an object belongs to the set A or not. For example, the number 21 belongs to set A because it is a two-digit number, and the number 145 does not belong to set A because it is not a two-digit number. Definition: If every element of set B is also an element of set A, then set B is called a subset of set A. If B is a subset of A, it is written as and reads: "B is a subset of A." "B goes into A". Definition: Sets A and B are equal if and its inverse. If the sets A and B are equal, then A = B is written. Non-intersecting sets are represented by two circles that have no point in common.

Repetition of the passed topic creates a ground for mastering a new topic in the mind of the teacher together with the student. This ensures the effectiveness of mastering a new subject. In this process, the student has the opportunity to freely and openly think about the problems. In the lesson, the teacher should attract students to the relevant problems, activate their character and, as a result, ensure their mastery. In this case, the teacher acts only as a guide, observer, and judge. Progress of the lesson process; The teacher creates a diagram for himself about the topic and uses each combination through this diagram. In the course of the lesson, the student has the right to ask questions to the teacher about questions he/she does not understand or is interested in. Interactive methods of teaching; FACILITATION (facilitate in English) - organization of group work, often related to specific, real, practical tasks, discussion on making specific decisions, development of a real plan of activities, designed to harmonize real, conflicting interests. EXPERIMENTAL is aimed at gaining "live" personal experience of students.

The concept of a set is one of the basic concepts of mathematics, it is not defined and is visualized with the help of examples. For example, a set of students in the auditorium, a set of vowels, a set of natural numbers, a flock of birds, a flock of sheep, etc. k. Some numbered sets have their own markings. The set of all natural numbers is denoted by N, the set of all integers by Z, the set of all rational numbers by Q, the set of all real numbers by R. The only characteristic property of the elements included in the collection is displayed. For example, if we give the above sets with a characteristic property: A is a set of vowel letters of the Uzbek alphabet; B—set of traffic light colors; C is the set of one-digit natural numbers. For numerical sets, it is convenient to give the characteristic property by a formula. In this case, as a rule, the symbol of the set element, a vertical line, and then the property corresponding to the set element are written in large brackets. It is known that today, when science and technology are developing rapidly, the volume of scientific knowledge, ideas and images is increasing sharply. On the one hand, this ensures its differentiation due to the development of new fields and departments of science and technology, and on the other hand, it creates the process of integration between sciences. The use of innovative methods to increase the effectiveness of the lesson, improving the skills of teachers, depends primarily on their special

professional potential. Taking into account the hour of the subject, they should also solve the problem of increasing their knowledge in different ways. With regard to the concept of the collection, educators can achieve good results in a short time with regard to the things they need. It is also very important for teachers to be satisfied with the training and the work they are doing. A set consisting of a finite number of elements is called a finite set. For example, the set of letters of the Latin alphabet, the set of colors of the rainbow, the set of numbers are finite sets. If the number of elements of a set is infinite, such a set is called an infinite set. For example, the set of all natural numbers, the set of points in the plane is infinite.

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