RATIO. PROPORTION AND PERCENTAGE PROBLEMS

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Abstract: The methodology of teaching mathematics is closely related to the sciences of pedagogy, psychology, algebra, mathematical analysis, analytical geometry and simple differential equations. This article describes in detail about ratio, proportion and percentage, which are mathematical properties.

Key words: ratio, proportion, percentage, mathematical property, fractional number, complex problems, etc.

The adoption of the Decision PQ-4708 of the President of the Republic of Uzbekistan dated May 7, 2020 "On measures to increase the quality of education in the field of mathematics and develop scientific research" is a clear proof of our opinion. According to the decision, it is necessary to adapt the content and essence of the mathematics curriculum to the fields, to prepare educational literature (textbooks) in mathematics on the basis of various programs and general methodological basis and with the help of modern information technologies, on the basis of real examples, graphic materials, and mathematical teaching. In lim, issues of interdisciplinary integration are also defined as one of the main priorities.

The theoretical knowledge and skills acquired within the framework of the study guide science program, in the teaching of mathematics in higher and secondary special educational institutions (lyceum, college), general education schools on the basis of modern pedagogical technologies and the history of science It is intended to be widely used in learning. Organization of science lessons for students on some topics with the help of electronic tools, use of advanced and modern methods of teaching for students to master science, implementation of new information and pedagogical technologies, textbooks for mastering this science, the use of educational and methodical manuals, lecture texts, handouts, virtual stands is important. Appropriate advanced pedagogical technologies are used in lectures and seminars. In this regard, the use of brainstorming, discussion lesson and other methods of modern pedagogical technologies has been shown.

Mathematical education is a process and result that helps students acquire the system of mathematical knowledge, form their worldview based on knowledge and skills, develop moral and other qualities, creative power and other capabilities of a person. Education is considered in two aspects: - social (reflecting society's demand for education); - personal (determines the goal intended for each person). An educated person will have the following characteristics: accuracy; breadth and flexibility of thought; ability to target a wide range of problems and strive to solve them; variety of needs; to be able to predict the development of events and to be able to model one's own activities; high efficiency. The main goal of mathematical education is to form students' ability to look at real life from a mathematical point of view, to see the practical directions of mathematics and its applications. In general, if k and n are non-zero numbers, k : n is a division ratio, and k and n are called terms of the ratio.

$k : n = q$ or $k : n = (k \cdot p) : (n \cdot p)$

Proportion - means how many times the first number is greater than the second number or what part of the first number is the second number. The equality of two ratios is called a proportion. Hence, the equation = is a proportion. It can be written as 4 : 5 = 8 : 10. From this we get the equation 4 · 10 = 5 · 8, i.e. 40 = 40. The numbers 5 and 8 are called the middle limits of the proportion, and the numbers 4 and 10 are its extreme limits. In general, the equality a · d = b · c is valid for the proportion a : b = c : d. Conversely, a, b, c, and d are non-zero numbers for which the equality a · d = b · c holds, which implies the equality = , i.e. a, b, c and d numbers make up the proportion.

Ratio, the ratio of two numbers, is the division obtained by dividing the first number by the second. N. of fractional numbers can be replaced by N.i of whole numbers. The ratio of two homogeneous quantities (section, angle, face, etc.) is understood as their numerical measurements. If the ratio of the lengths of two sections is a rational number, they are called commensurate, and if it is irrational, they are called non-commensurate sections. Such concepts also apply to faces, angles, and others. In everyday life, when we talk about proportions, we say "the ratio of this and that". For example, if there are 4 apples and 2 pears in a vase, we say that the ratio of apples to pears is the ratio of pears to apples. In mathematics, ratio is often used as "the relationship of one thing to another." For example, in mathematics, the ratio of four apples and two pears, which we discussed above, is read as follows. "the ratio of four apples to two pears" or "the ratio of two pears to four apples" if you swap apples and pears.

In mathematics, a ratio is the ratio of two numbers. This ratio allows you to determine how much one object is per unit of another. Let's go back to the ratio of four apples to two pears (4:2). This ratio allows you to determine how many apples are per unit of pear. A unit means one pear. First, we write the ratio 4:2 as a fraction: This ratio is the division of 4 by 2. If we do this division, we will get the answer to the question of how many apples fit into one pear. We have 2. Thus, four apples and two pears (4: 2) are related (related to each other), each pear has two apples. The picture shows how four apples and two pears are related to each other. You can see that there are two apples for every pear. The relationship can be changed by writing in reverse. Then we get the ratio of two pears and four apples, or "the ratio of two pears to four apples." This ratio shows how many pears there are per unit of apples. An apple unit means one apple. To find the value of a fraction, you need to remember how to divide a smaller number by a larger number.

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