SIMPLE RATIONAL INEQUALITIES

KURBONBOYEV ALIJON

Vocational school No. 1, Bostanliq district, Tashkent region

Mathematics teacher

+998888720091

ANNOTATSIYA*: In this article, after gaining independence, our country is moving forward with strong people, the modern fields of science and technology are developing, and this development makes it possible for scientists to solve many modern problems. "Your attention I will focus on the implementation of the following tasks," says our president Sh.M. Mirziyoyev:*

"The first task is in the field of preschool education. We must openly admit that we have neglected the work in this important area. Children's coverage in this area is 27 percent. According to the recently approved program, the material and technical base of 2,200 institutions was strengthened in this direction. The second task is related to the quality of teaching in general education schools, lyceums and vocational colleges, as well as higher educational institutions. Implementation of modern curriculum and methods is not up to the demand. They noted that the tasks of in-depth study of special subjects, the history of our country and world civilization, foreign languages and modern computer programs for children and young people have not yet been fully and qualitatively solved.

Key words: *1. Studying the concepts of the educational thesaurus, the student's lecture. 2."Rational equations and inequalities. Building an educational thesaurus of "irrational equations" topics. 3. Designing the topic "Rational equations and inequalities. Irrational equations" based on thesaurus analysis. 4. Selection of means and methods of teaching "Rational equations and inequalities. Irrational equations" based on the thesaurus approach. 5. Development of a one-hour lesson on the topic "Rational equations and inequalities. Irrational equations".*

INTRODUCTION

First, let's take a closer look at the concept of an equation, an equation in the

form of f(x)=g(x) is called an equation with one unknown (where f(x) and g(x) are functions of unknown x). If the equation f(a)=g(a) is formed when the value x=a is substituted for x in the equation, the value x=a is called the root of the equation f(x)=g(x). Solving an equation means finding all its roots or proving that it does not exist. If the roots of the equation are numbers $a1$, $a2$,... , an, then they are the set $\{a1, a2,... , an\}$ is written as $x1=a1$, $x2=a2$, ..., $xn=an$. The set of all the roots of the equation is called the solution of the equation. If there is no root of the equation, it is called "No root of the equation" or "Solution of the equation - the phrase "empty set" is used.

LITERATURE ANALYSIS AND RESEARCH METHODOLOGY

Example 1. Solve the equation (x+3)(2x-1)(x-2)=0. The right-hand side of this equation is zero, and the left-hand side is the product of 3 expressions. we can equate:x+3=0, 2x-1=0, x-2=0. From these equations, we can determine that the roots of the equation are $x1 = -3$, $x2 = 1\ 2$, $x3 = \sqrt{2}$.

Example 2. Write an equation whose roots are 0, -1, and 2. Equations of different forms can be given as answers. We remind you that the simplest equation is x(x+1)(x-√2)=0. These numbers can also be roots of the following equation: $(x\ 2 + x\ 3\ )(x - \sqrt{2})(x\ 2 + 3) = 0$ Definition: If f(x)=g(x) all roots of the equation are $f1\ (\ x) = g1(x)$ are the roots of the equation, and vice versa, if all the roots of the equation $f1\ (x) = g1(x)$ are the roots of the equation f(x)=g(x), that is, their solutions are superimposed such equations are called equipotent equations.

Example 3. Check that the equations 3x-6=0 and 2x-1=3 are equal. The equations 3x-6=0 and 2x-1=3 are equal because each has a root equal to x = 2. Any two equations whose solution is the empty set are equally strong. 65 Equivalent equations are defined as follows: 3x-6=0↔2x-1=3 The equation changes to an equal equation in the following cases: a) One term of the equation moves from one part of the equation to the other part with the opposite sign. when done. For example, f(x)=g(x)+t(x) ↔f(x)-g(x)=t(x) b) When both sides of the equation are multiplied by a number different from zero. Assertions about equally strong equations.

1. The equations f (x) = g(x) and f (x) - g(x) = 0 are equally strong.

2. The equations f (x)=g(x) and f (x)+a= g(x)+a are equally strong for an arbitrary real number a.

3. The equations f (x)=g(x) and a f (x)=a g(x) are equally strong for an arbitrary nonzero real number a.

4. Let's say that the function $\varphi(x)$ is defined in the field of definition of the equation f (x)=g(x). Then the equations f (x)=g(x) and f (x)+ $\varphi(x)$ = g(x)+ $\varphi(x)$ are equally strong.

5. Let the functions y=f(x) and y=g(x) be non-negative in the set A. Then the equations f (x)=g(x) and f n (x)=g n (x) are equally strong in set A.

6. Suppose that the function $\varphi(x)$ is defined in the domain of the equation f (x)=g(x) and does not take zero value at any point.

Then the equations f (x)=g(x) and f (x)· $\varphi(x)$ = g(x)· $\varphi(x)$ are equally strong. All rational equations. Definition. If the functions f (x) and g(x) are given by whole rational expressions, the equation f (x)=g(x) is called a whole rational equation. The domain of such an equation is the set of all real numbers. Definition: The following equation $a0x\ n + a1x\ n-1 + a2x\ n-2 + \cdots + an-1x + an=0$, $a0 \neq 0$ is called an n-level rational equation in standard form.

If $a0 = 1$, then the equation $x\ n + a1x\ n-1 + \cdots + an-1x + an=0$ is called an entire rational equation of the given degree. $a0, a1, \ldots, an-1$ are coefficients, an is called a free term. It is known that an n-degree polynomial can have no more than n roots, so every n-degree rational equation in standard form also has no more than n roots will be Theorem: If the roots of an entire rational equation with integer coefficients are integers, then they are divisors of the free term. Theorem: If $a0x\ n + a1x\ n-1 + a2x\ n-2 + \cdots + an-1x + an=0$, then the rational equation $a0 = q\ q$ has a rational root., then p is the divisor of the free term (an), and q is the divisor of the main term $a0$.

DISCUSSION AND RESULTS

The development of the information society requires the improvement of the quality of education, especially mathematics education. Nowadays, there are several approaches aimed at improving the quality of education, but they focus on the

problems of mathematical preparation in modern conditions (for example, coherence and continuity; the development of algorithmic and abstract thinking; taking into account the individual characteristics of the processes of perceiving, remembering and processing numerical, symbolic and abstract information and others) does not completely solve.

One of the ways to improve the mathematical training of future teachers of mathematics in the conditions of the information society is to use an informational approach to teaching mathematics in pedagogical higher education institutions. From the point of view of this approach, teaching is considered as an informative process aimed at forming a thesaurus. Thesaurus (thesauros) means treasure, wealth, reserve in Greek. It entered science from linguistics and informatics, expanded its meaning and became a universal term. The meaning of this term can be understood as follows: all the concepts of natural language that serve to describe the world around us form a common thesaurus of the world and reflect all our knowledge. On the basis of a general thesaurus, it is possible to create an unlimited number of thesauruses in various fields of science and technology, as well as on specific problems and issues.

In pedagogy, the concept of thesaurus appeared in the information-semantic model of teaching recommended by L.T. Turbovich. In this model, the author defines the thesaurus as a store of concepts, evaluations, and norms, including action schemas, embodied and preserved in the memory of a person. According to this model, the formation of a person's consciousness is equated with the formation of his conceptual psychological thesaurus. When new information is added to the thesaurus, its expansion is interpreted as teaching by the author.

V.I. Ginetsinsky L.T. Continuing his ideas, Turbovichny considers the learning process as "a process of expanding and reorganizing the thesaurus." A.A. Miroshnichenko, working within the framework of the pedagogical thesaurus creation technology, emphasizes the expediency of studying the thesaurus in pedagogy into two groups: personal thesaurus and educational thesaurus. According to him, each person has a certain thesaurus, which is formed under the influence of

internal and external factors throughout his life. The process of adding new information to a personal thesaurus is interpreted as learning. Since the information transmitted in teaching consists of educational material, the selection and compilation of educational material can be considered as the process of building an educational thesaurus.

The task of the educational thesaurus is to fill the conceptual psychological thesaurus of a person. To optimize training, it is necessary to ensure the highest throughput of the communication channel between the training thesaurus and the personal thesaurus. A.A. Agreeing with Miroshnichenko, we recognize that each individual has a personal thesaurus. (Talking about the thesaurus of a person, we do not take into account the degree of perfection). Under the term "personal thesaurus" (or "personal thesaurus") we understand the system of knowledge that belongs to this or that person. A person needs a "learning thesaurus" to supplement his knowledge and target new information streams. Thus, in our imagination, the educational thesaurus is an activity tool that includes all skills, all operations, aimed at discovering new knowledge, a tool that helps the student to organize, correct, organize his work, this student with the least amount of effort and time. a means of achieving specified results.

A learning thesaurus primarily includes descriptors - basic concepts and logical operations performed with given concepts. The speed of acquisition of new knowledge, the ability to target them, and their practical application are proportional to how well the personal thesaurus of students has improved. The educational, developmental, motivational and activating functions of the thesaurus are revealed in the works devoted to the thesaurus approach in education. It is also emphasized that looking at the thesaurus as a didactic tool, it cannot be considered only as a material or only as an ideal tool.

The thesaurus as a material tool is mainly related to arousing the interest and attention of students, and as an ideal tool, it is related to the development of understanding, thinking, logic, and intellect of the material. There are few works devoted to the thesaurus approach in mathematics education, mostly done by T.P.

Pushkareva and his colleagues. In his works, the issues related to the teaching of mathematics at school, teaching of natural sciences at higher educational institutions of pedagogy, the use of chemistry in teaching, and the creation of a thesaurus of mathematical chemistry were considered.

CONCLUSION

In the Real Numbers module of Mathematical Analysis, it can be seen that studying the properties of the set of rational numbers is a high-level abstraction compared to performing operations on individual rational numbers or comparing them. Introducing the concept of fraction in the set of rational numbers, calling it a real number, comparing real numbers, performing operations on them through fractions, using fractions in proving the properties of the set of real numbers requires a high level of abstraction. In this case, we suggest the following method of using the thesaurus to motivate the teacher to learn these concepts and properties. In the school course, the teacher writes down mathematical concepts and terms in the perfected I know-I want to know-I know (BBB) table for each subject material in the school course. is output and the appropriate objects are ticked (ideally for the learner). It is this table that is recommended to students and they are invited to fill in columns 2-4 of the table.

REFERENCES

1. Ayupov Sh.A. Qurilish iqtisodiyoti. [Matn]/Ayupov Sh.A., Omirov B.A., Xudoyberdiyev A.X., Haydarov F.H. –T.: «Tafakkur-bo‘stoni» nashriyoti, 2019-yil, – 304 bet. “Algebra va sonlar nazariyasi”
2. 10-sinf Algebra va analiz asoslari [Matn]: darslik / A. Zaitov [va boshq.] − Toshkent: Respublika ta’lim markazi, 2022.-192b.
3. R.M.Turg’unboyev.”Matematik analizni tezaurustik yondashuv asosida o’qitish”.Toshkent-2022
4. Тургунбаев Р.М. Математик анализ фанининг ўқув тезаурусини шакллантириш ва унинг аҳамияти// Муғаллим ҳәм үзликсиз билимлендириў. 2021 №1. 127-132б.