SPECIFIC CHARACTERISTICS OF STUDYING PARAMETER-RELATED PROBLEMS AT SCHOOL.

KSPI teacher
Tolipov .R.M
KSPI student
Tursunova .M.M

Annotation: *This article provides information about the role and importance of parameter-related issues in the teaching of mathematics, as well as the specific features of studying parameter-related issues at school.*

Key words: *parameter, example, problem, mathematical operation, linear equation.*

In addition to preparing students for direct exams, teaching parameter-based examples and problem-solving methods serves to deepen their study of mathematics, to increase students' mathematical culture, and to expand their thinking skills. .

It is known that solving problems related to parameters requires the student to acquire a certain level of deep mathematical knowledge, to divide problems into elementary parts at a reasonable level, to form generalization skills, to justify each of the presented mathematical operations, and to learn requires a full understanding of the rationale of his actions.

We believe that it is appropriate to learn to solve problems related to parameters starting from the 7th grade, and it should be carried out continuously in each lesson in an organic connection to other training topics. Start by solving linear equations with parameters and, if possible, a system of equations with simple parameters. In the 8th grade, study some types of second-order equations with parameters. In the 9th grade, the location of the roots of the quadrilateral depending on the parameter and the calculation of the solutions of the equation depending on the parameters.

In the following equations, find the variable x, that is, at what values of the parameter, the solution of the equation exists, and it is required to determine the appearance of all their (parameter) solutions.

ax=10 b) x-a=bx, c) 3x+8=ax-3 d) (a-2)x+5=a+3

To introduce students to the system of equations depending on parameters, to solve examples and problems after getting acquainted with the topic "System of linear equations in two variables". Usually, this topic is demonstrated in lessons by solving it using the graphical method. Add the following tasks to this topic choose such values of the year ava b parameter that:

a) let the system have a unique solution;

b) the system does not have a solution;

a) $\begin{cases} y = ax - 6 \\ y = 3x - 1 \end{cases}$ b) $\begin{cases} y = bx - 6 \\ y = -14x + 8 \end{cases}$

When solving this system of equations, special attention is paid to the fact that the solution fully meets the above questions and requirements.

Find system solutions with the following parameters

a) $\begin{cases} y = kx - a \\ y = px - 3 \end{cases}$ b) $\begin{cases} y = (k+3)x - k \\ y = (\mathrm{p}+3)x - p \end{cases}$

The solution of the first system comes from the interposition of the graphs of the linear function. Answer: (0; 3)

Solving the second system of equations requires solving the equations analytically.

$\begin{cases} y = (k+3)x - k, \\ y = (\mathrm{p}+3)x - p \end{cases} \Leftrightarrow \begin{cases} y = (k+3)x - k, \\ (k+3)x - k = (\mathrm{p}+3)x - p \end{cases} \Leftrightarrow \begin{cases} y = 3 \\ x = 1 \end{cases}$ Answer: (1, 3)

Find the solution of the given system for all values of parameter a

$\begin{cases} x + ay = 1, \\ ax + y = a^3 \end{cases}$ solution: $\begin{cases} x = 1 - ay, \\ a - a^2x + y = a^3 \end{cases} \Leftrightarrow \begin{cases} x = 1 - ay, \\ y(1 - a^2) = a^3 - a \end{cases}$

1. If so, the system

2. $\begin{cases} y = -a, \\ x = 1 + a^2 \end{cases}$

is equivalent to the system.

$\begin{cases} 0 = 0, \\ x = 1 - y \end{cases}$ If a=1, the system

will have an appearance.

If a=-1, the system is equivalent to the equation x=1+y

answer: if $a \neq \pm 1$ if so, $(1 + a^2; -\mathrm{a})$

if $a = 1$ if so, $(1 - \mathrm{y}; \mathrm{y})$

if $a = -1$ if so $(1 + \mathrm{y}; \mathrm{y})$.

For 8th grade students, it is recommended to conduct problems related to parameters on the topics of "Quadratic Equations", "Rotational Fractional Equations", "Inequalities".

Examples. of Eqs

$x^2 - 5x + k = 0 \qquad x_1 = 5$

find k and its second root if

$x^2 - kx + 15 = 0 \qquad x_1 = 3$

find k and its second root if

$x^2 + 3x + c = 0$

Find the values of the following equation so that its roots are equal to p and c.

$(a+1)x^2 + 3ax - 1 = 0$ show that the equation has a unique

at what values of a solution.

Solve the equation: $ax^2 = 1$

a is a parameter satisfying the equation 2(1+a)x-a-2=0

a) that it has two solutions b) that it does not have a solution

c) find all values that have two-fold solutions.

$ax^2 + 2x + 4 = 0$

2. find all values of the parameter a that have a solution to the equation.

LITERATURE:

1. Tolipov R., Yusupov M. THE ROLE AND IMPORTANCE OF THE FORM OF EDUCATION IN IMPROVING THE EFFECTIVENESS OF THE LESSON //Galaxy International Interdisciplinary Research Journal. – 2022. – T. 10. – №. 12. – C. 1633-1637.

2. Normatov A. A., Tolipov R. M., Musayeva S. H. Q. MAKTABLARDA MATEMATIKA FANINI O ‘QITISHNING DOLZARB MASALALARI //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – T. 2. – №. 5. – C. 1068-1075.

3. Mamasolievich T. R. PECULIARITIES AND TYPES OF ORGANIZING EXTRACURRICULAR ACTIVITIES IN MATHEMATICS IN ELEMENTARY GRADES //Conferencea. – 2023. – C. 102-107.

4. Толипов Р. М. СПОСОБЫ ИСПОЛЬЗОВАНИЯ МЕТОДОВ ИНДУКЦИИ, ДЕДУКЦИИ И АНАЛОГИИ ПРИ РЕШЕНИИ ПРИМЕРОВ И ЗАДАЧ В МЛАДШИХ КЛАССАХ //E Global Congress. – 2023. – №. 2. – C. 36-46.

5. Mamasoliyevich T. R. BOSHLANG ‘ICH SINF MATEMATIKA DARSLARIDA DIDAKTIK O ‘YINLAR ORQALI DARSLARNI TASHKIL ETISH DARS SAMARADORLIGINI MUHIM OMILI //Ustozlar uchun. – 2023. – T. 19. – №. 2. – C. 195-201.

6. Tolipov R. Characteristics of the levels of formation of the control action in younger schoolchildren //INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN: 2277-3630 Impact factor: 7.429. – 2022. – T. 11. – №. 11. – C. 92-99.

7. RM T. et al. BOSHLANG ‘ICH SINF MATEMATIKA DARSLARIDA TARIXIY MATERIALLARDAN FOYDALANISH VA XUSUSIYATLARI //Current Issues of Bio Economics and Digitalization in the Sustainable Development of Regions (Germany). – 2023. – C. 116-122

8. RM T., Roziqova Z. O., Yusubjonova D. Q. KOORDINATALAR SISTEMASI ORQALI TO’G’RI CHIZIQ VA TEKISLIK ORASIDAGI MASOFALARNI TOPISHGA DOIR BA’ZI BIR AMALIY MASALALAR YECHIMLARI //INNOVATIVE DEVELOPMENTS AND RESEARCH IN EDUCATION. – 2023. – T. 2. – №. 24. – C. 371-376.

9. RM T. UCHBURCHAK VA AYLANA DOIR TUSHUNCHALAR VA ULARGA DOIR BA’ZI AMALIY MASALALAR YECHISH //INNOVATIVE DEVELOPMENTS AND RESEARCH IN EDUCATION. – 2023. – T. 2. – №. 24. – C. 377-384.

10. Mamasoliyevich T. R., Gulruh J. BOSHLANG ‘ICH SINFLARDA O ‘QUVCHILARNI KOMBINATORIKA MASALALARINI YECHISHGA O ‘RGATISHNING INNOVATSION USULLARI //Conferencea. – 2023. – C. 63-68.

11. Tolipov R. THE CONCEPT OF INTEGRATION IN THE APPROACH TO MATHEMATICS //Science and innovation. – 2023. – T. 2. – №. B3. – C. 284-288.

12. Shoqosim o'g'li A. U. et al. Technologies For Improving The Quality Of Educational Results Of Schoolchildren By Developing A Personalized Model Of Teaching Mathematics Through Interactive Stories //Journal of Positive School Psychology. – 2022. – T. 6. – №. 11. – C. 1354-1365.

13. Abdullayevich N. A., Mamasoliyevich T. R. MAKTABLARDA MATEMATIKA FANINI O ‘QITISHNING DOLZARB MASALALARI. – 2022.

14. Mirhojiddinovna, J. D., Shavkatovna, A. M., & Alijonovna, M. D. (2022). Lingupoetic Features Of Unconventional Combinations And Agricultural Terms In Literary Texts. Journal of Positive School Psychology, 6(11), 1599-1604.

15. Abdulkhayeva, M. The Role of Dictations in the Development of Students' Written Speech in the First Class. International Journal of Innovative Research in Science, Engineering and Technology.

16. Abdulxayeva, M. (2023). ONA TILI VA O ‘QISH SAVODXONLIGI DARSLARIDA DIDAKTIK METODLARNING TUTGAN O ‘RNI. Scienceweb academic papers collection.

17. Musharrafa, A. (2023). Relationship of Mother Language and Reading Literacy with Natural Science. World of Science: Journal on Modern Research Methodologies, 2(3), 78-82.

18. Abdulxayeva, M. (2023). AKTdan foydalangan holda diktant olish metodikasi. Scienceweb academic papers collection.

19. Abdulxayeva, M. (2023). O'Z DIKTANT YOKI YODDAN YOZUV DIKTANTI. Interpretation and researches, 1(1).

20. Musharraf, A. (2023). EDUCATIONAL DICTATION AND ITS TYPES. Open Access Repository, 9(6), 211-216.

21. Abdulhayeva, M. (2023). EDUCATIONAL DICTATION AND ITS TYPES.

22. Абдулхаева, М., & Эргашалиева, С. (2023). РОЛЬ «УЗБЕКСКИХ НАРОДНЫХ СКАЗОК» НА УЧЕБНЫХ УРОКАХ. Talqin va tadqiqotlar, 1(20).

23. Musharraf, A. (2023). METHODOLOGY OF RECEIVING DICTATIONS USING DIFFERENT METHODS IN PRIMARY CLASSES. INNOVATIVE ACHIEVEMENTS IN SCIENCE 2022, 2(23), 122-127.

24. Musharraf, A. (2023). THE ROLE OF DIDACTIC METHODS IN MOTHER LANGUAGE AND READING LITERACY LESSONS. Open Access Repository, 9(11), 105-108.

25. Umidaxon, A. (2023). BOSHLANG'ICH SINF O'QUVCHILARINING BILIMLARINI BAHOLASHDA MANTIQIY MASALALARNING O'RNI. Ustozlar uchun, 24(3), 17-24.

26. Abdulxayeva, M. va Umidaxon, M. (2024, may). BOSHLANGICH SINFLARDA XALQ OG'ZIQ IJODINING AHAMIYATI. Xalqaro global konferensiyada (1-jild, 7-son, 129-132-betlar).

27. Abdulxayeva, M., & Mukhtaram, I. (2024, may). ERTAKLARI-AJODALARIMIZNING TA'LIMLARI VA NASILLARI. Xalqaro global konferensiyada (1-jild, 7-son, 125-128-betlar).

28. Musharraf, S. M. K. A., & Baydemir, H. (2024, May). VERGUL VA UNING USTIDA MASHQLAR. In International Global Conference (Vol. 1, No. 7, pp. 121-124).

29. Abdulxayeva, M., & Umidaxon, A. (2024, May). BOSHLANG'ICH SINFLARDA MATEMATIKA O'QITISHDA INTERFAOL METODLARDAN FOYDALANISH. In International Global Conference (Vol. 1, No. 7, pp. 69-74).

30. Abdulxayeva, M., & Gulchiroy, M. (2024, May). IKKI NUQTA VA UNING QO'LLANILISH O'RINLARI. In International Global Conference (Vol. 1, No. 7, pp. 66-68).

31. Musharraf, A. (2023). BOSHLANGAN SINF O'QUVCHILARIGA SO'ZLAR MANOSINI TUSHINTISH METODIKASI. Ustozlar uchun , 24 (3), 10-13.

32. Musharraf, A. va Nozimaxon, M. (2024). PUNKTUATSIYA VA ULARNING FOYDALANISHI. PUNKTUATION. TA'LIMDA INNOVATSION ISHLAB CHIQISH VA TADQIQOTLAR , 3 (28), 5-8.