What Is Solving The Problem? Methods of Solving Text Problems

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Abstract: *From ancient times the solution of arithmetic problems was respected. People have been able to answer a lot of practical questions. It is not for nothing that it is said that "mathematics is the gymnastics of the mind." The problem is not easy to solve. First, you need to know how to use addition, subtraction, multiplication, and division. That's not all. The difficulty is to be able to perform the arithmetic operation required to find the unknown and sought value.*

Keywords: information about objects and some of the quantities that characterize the given objects, about the known and unknown values of these objects, about the relationship between them.

INTRODUCTION

Simple arithmetic problems that can be solved with one operation, in general, two formulas is represented by:

a-b + c and a = b-c.

Therefore, in solving a simple problem, it is enough to know: a = b + c and a = b 'c; determine which quantity is unknown (addition, sum, multiplication, multiplier); select the appropriate action.

Problem solving is the process of fulfilling a problem (answering a question) by means of a logically correct sequence of actions on numbers, quantities, and relationships that exist directly or indirectly in the problem.

Arithmetic and algebraic methods are distinguished as the main methods of solving problems in mathematics. In the arithmetic method, the answer to the problem is obtained by performing an arithmetic operation on numbers.

Different arithmetic methods of solving the same problem differ in the sequences in the execution of these relations in the choice of arithmetic amaUami between the given, between the given and the unknown.

METHODS

1- masala. The picker picked 96 kg of cotton in 8 hours. How many kg of cotton does he pick in 5 hours?

Solution.

1- method. 96: 8 = 12 (kg) and 12 • 5 = 60 (kg).

2- method. 8: 5 = 1.6 (times) and 96: 1.6 = 60 (kg).

3- method. 8 hours = 480 min, 480: 96 = 5 (min), 5 hours = 300 min, 300: 5 = 60 (kg).

2- masala. A bowl and two porcelain bowls take 740 g of water. The cup takes 380 g more water than the bowl. How many grams of water does a cup take?

Solution. 1- method. Let xg of water go into the bowl, then according to the conditions of the problem, one bowl (x - 380) g and two bowls (x - 380) • 2 g of water, the bowl and two bowls (x + (x -380)) xx 2 g water goes. Since 740 g of water is consumed in a bowl and two bowls, the equation x + (x - 380) • 2 = 740 can be formed. Solving it gives x = 500, ie 500 g of water per cup.

2- method. Let x g of water go to the bowl, then go to the bowl (x + 380) g of water, add 2x to two cups. Kosavaikkitapiyola takes ((jc + 380) + 2x) g of water. Since 740 g of water is consumed in a bowl and two bowls, the equation (x + 380) + 2 x = 740 can be constructed. Solve it and find x = 120. To find how much water flows into the bowl, the found value of x is expressed as x + 380. Then 120 + 380 = 500. So, 500 g of water goes into a cup.

3- method. Let xg of water go into a bowl, let yg of water go into one bowl, then 2y g of water go into two bowls, go into two cups (x + 2y) g of water, go into one bowl (x - 380) g, express x - 380 cups and two we get a system of equations because 740 g of water goes into the bowl. Solving this system, we get x = 500, y = 120. In the case, the amount of water flowing into the bowl is selected from the data found because it is required to be found.

Issue 3. One hundred people can plow the land in 10 days with the help of manual labor, and 1 hour on a "Uzbekistan" tractor. How many days will it take to drive this field together on a manual and a tractor?

Y e c h i s h. The condition of this problem is that a hundred people can plow the land by hand in 10 days, and a tractor "Uzbekistan" in 1 day. It describes the relationship between three quantities: workload, productivity, and time spent doing the work, which deals with three different situations.

The first situation. A workload can only be done manually with a certain amount of efficiency. The cost of one package is known, and the working time is 10 days. The value of the other quantities is unknown.

The second situation. The same amount of work can be done only on a tractor "Uzbekistan" with a certain efficiency. Hours are 1 day. The values of the other quantities are unknown.

The third situation. That's the decent thing to do, and it should end there. The values of the three quantities are unknown.

The question is, "How many days will it take to drive this field?" It shows the value of one of the unknowns, and that is, the time worked by the two together. This demand itself is questionable "When the two work together, find out how many days it will take them to drive the field."

RESULTS

Issue 1. In the algebraic method, the answer to the problem is found by constructing and solving the equation. Depending on the choice of the unknown and the way of reasoning, different equations can be formed on the same problem.

Issue 2. In the process of solving the problem, students acquire new mathematical knowledge and prepare for practical activities. It is important that the student has a deep understanding of the textual problem, its structure, and the ability to solve problems in a variety of ways.

A textual question is a natural expression of a situation that requires a quantitative description of a part of the situation, whether there are some relationships between its parts, or to determine the type of relationship.

Any textual issue is a condition and a requirement.

The condition of the problem provides information about the objects and some of the quantities that characterize the given objects, about the known and unknown values of these objects, about the relationship between them.

The demand of the matter is to show what to find. For example, it can be expressed in the form of a command (find the face of a rectangle) or a question (What is the face of a rectangle?).

Issue 3. In this case, there are five unknown values of quantities, one of which is a requirement of the problem. This value of the quantity is called the quantity sought.

In everyday life, various problematic situations are common. Issues based on them may contain redundant information, ie information that is not necessary to meet the requirements of the case. For example, in the above case, the names of the types of tractors do not matter to meet its requirements.

DISCUSSION

In the process of solving the problem, students acquire new mathematical knowledge and prepare for practical activities. It is important that the student has a deep understanding of the textual problem, its structure, and the ability to solve problems in a variety of ways. Any textual issue is a condition and a requirement. The condition of the problem provides information about the objects and some of the quantities that characterize the given objects, about the known and unknown values of these objects, about the relationship between them.

CONCLUSION

A textual question is a natural expression of a situation that requires a quantitative description of a part of the situation, whether there are some relationships between its parts, or to determine the type of relationship. In the process of solving the problem, students acquire new mathematical knowledge and prepare for practical activities. It is important that the student has a deep understanding of the textual problem, its structure, and the ability to solve problems in a variety of ways.

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