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"Equal" And "Small" Relations. Add. Laws Of Addition

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Abstract: *The sum of all non-negative numbers a and b is n (A) = a, n (B) = b. is the number of elements in a combination of sets A and B that do not intersect, i.e. In addition, the law of grouping applies to subtraction when adding a number to a sum, adding a sum to a number, and adding a sum to a sum.*

Keywords: In addition, the law of grouping when subtracting a number, adding a number to a number, subtracting a sum when adding a sum to a sum, the law of addition, equal and small relations.

INTRODUCTION

1. Goals and objectives of the topic.

a + b = n (AUB), where n (A) = a, n (B) = b and A n B = 0, where n (B) and n (A) represent the number of elements of the set A and B . The sum of all non-negative numbers a and b is n (A) = a, n (B) = b. is the number of elements in a combination of sets A and B that do not intersect, i.e. In addition, the law of grouping applies to subtraction when adding a number to a sum, adding a sum to a number, and adding a sum to a sum.

1-for example. Explain that 5 + 2 = 7 using the given definition.

Example 2 Find the sum of 2 + 7 + 15 + 19.

3- example. Using the addition laws, calculate the value of the expression 109 + 36 + 191 + 64 + 27.

4- example. Add the number 4 to the sum of 2 + 1.

Exercise 1 Prove that a + b = b + a holds for an arbitrary integer non-negative numbers a and b.

Exercise 2 Prove that the equation (a + b) + c = a + (b + c) holds for arbitrary non-negative numbers a, b, and c.

METHODS

a + b = n (AUB), where n (A) = a, n (B) = b and A n B = 0, where n (B) and n (A) represent the number of elements A and B in the set .

1- example. Explain that 5 + 2 = 7 using the given definition.

Y e c h i s h. Let 5 be the number of elements in a set A and 2 be the number of elements in a set. Conditionally, their intersection must be an empty set. For example, A = {x; y; z ', t; p), B = {a; b} sets are obtained. They are combined: A U B = {x; y; z; t, p; a; b}. Count to find that n (A U B) = 7. So, 5 + 2 = 7.

In general, the sum of a + b does not depend on the choice of non-intersecting sets A and B that satisfy the condition n (A) = a, n (B) = b. Also, the sum of all non-negative numbers is always present and unique.

The existence and uniqueness of a set is due to the existence and uniqueness of the combination of the two sets.

The operation used to find the sum is the addition operation, and the numbers that are added are called additions.

Find the sum of the two terms and the sum of the n terms. In this case, the sum of a, + a2 + ... + an + an + i (at + a2 + ... + an) consisting of n + 1 is equal to + an + l.

2- example. Find the sum of 2 + 7 + 15 + 19.

Solution. To find the sum of 2 + 7+ 15 + 19, perform the following substitution according to the above definition:

2 + 7 + 15 + 19 = (2 + 7 + 15) + 19 = ((2 + 7) + 15) +

+ 19 = (9 + 15) + 19 = 24 + 19 = 43.

Exercise 1 Prove that a + b = b + a holds for an arbitrary integer non-negative numbers a and b.

Proof. Let a be the number of elements in set A, and b the number of elements in set B. In this case, according to the definition of the sum of all non-negative numbers, the number a + b is the number of elements in the combination of sets A and B, that is, a + b = n (A UB). According to the permutation property of a set of sets, A UB is equal to set B UA and n (A UB) = n (B L) A

By the definition of the sum, n (Bl) A) = b + a, so a + b = b + a for any non-negative integer ava b numbers.

Exercise 2 Prove that the equation (a + b) + c = a + (b + c) holds for arbitrary non-negative numbers a, b, and c.

I s bo t. Let a = n (A), b = n (B), c = n (Q, where AUB = = BU A. In this case, according to the definition of the sum of two sori, (a + b) + c = n (AUB) + n (C) = n ((A UB) UC).

Since the combination of sets obeys the law of grouping, n ((A UB) UQ = n (AD (5n Q)). According to the definition of the sum of these two numbers, n (A n (B n C))) = n (A) + + n (BUQ = a + (b + c) did not occur. Hence, for any non-negative integer a, bvac, (a + b) + c = a + (b + c) did not occur.

3- example. Using the addition laws, calculate the value of the expression 109 + 36 + 191 + 64 + 27.

Solution. Under the Replacement Act, 36 and 191 members will be replaced. In this case 109 + 36 + 191 + 64 + 27 = 109 + 191 + 36 + 64 + 27.

Using the grouping law, we group the participants and then find the sums in parentheses: 109 + 191 + + 36 + 64 + 27 = (109 + 191) + (36 + 64) + 27 = (300 + 100) + 27 .

Performing the calculations, we find (300 + 100) + 27 = 400 + 27 = 427.

In addition In addition, the law of grouping is applied in case of addition of a number to the sum, addition of the sum to the number, addition to the sum.

4- example. Add the number 4 to the sum of 2 + 1.

Solution. Add 4 to the sum of 2 + 1

You can write in the following ways:

a) 4 + (2 + 1) = 4 + 3 = 7; d) 4 + (2 + 1) = 5 + 2 = 7.

b) 4 + (2 + 1) = 6 + 1 = 7;

In the first case, the calculations were performed in accordance with the order of operations.

In the second case, the grouping property of the addition is applied. The latter calculation is based on the laws of substitution and grouping of additions, in which intermediate substitutions are omitted. Initially, according to the law of permutation, we swapped places for adders 1 and 2, that is, 4 + (2 + 1) = = 4 + (1 + 2). Then we used the law of grouping, i.e. 4 + (1 + 2) = (4 + 1) + 2. Finally, we performed the calculations in the order of operations, i.e. (4 + 1) + 2 = 5 + 2 = 7.

Given two non-negative integers a and b. Let a = n (A) and b = n (B). It is known that if these sets are of equal power, then they correspond to exactly one number, that is, a = b.

RESULTS

In addition, the law of grouping applies to subtraction when adding a number to a sum, adding a sum to a number, or adding a sum to a sum.

Given two non-negative integers a and b. Let a = n (A) and b = n (B). It is known that if these sets are of equal power, then they correspond to exactly one number, that is, a = b.

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Since the combination of sets obeys the law of grouping, n ((A UB) UQ = n (AD (5n Q)). According to the definition of the sum of these two numbers, n (A n (B n C))) = n (A) + + n (BUQ = a + (b + c) did not occur. Hence, for any non-negative integer a, bvac, (a + b) + c = a + (b + c) did not occur.

DISCUSSION

Let 5 be the number of elements in a set A and 2 be the number of elements in a set. Conditionally, their intersection must be an empty set. For example, A = {x; y; z ', t; p), B = {a; b} sets are obtained. They are combined: A U B = {x; y; z; t, p; a; b}. Count to find that n (A U B) = 7. So 5 + 2 = 7. The best method.

CONCLUSION

In general, the sum of a + b does not depend on the choice of non-intersecting sets A and B that satisfy the condition n (A) = a, n (B) = b. Also, the sum of all non-negative numbers is always present and unique.

The existence and uniqueness of a set is due to the existence and uniqueness of the combination of the two sets.

The operation used to find the sum is the addition operation, and the numbers that are added are called additions.

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