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The Concept of Relationship. Characteristics of Relationships

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Abstract: *In mathematics, not only objects (numbers, figures, sizes) are studied, but also the relationships between them. For example, the number 11 is greater than the number 9 (more); 7 is 2 more than 5; The number 5 comes after the number 2, more precisely, it is connected with "more", "more", "later" and so on. In geometry, the parallelism and perpendicularity of straight lines, the equality and similarity of figures, the comparison, intersection or equality of sets, etc. are studied.*

Keywords: If the relation R given in set X is transitive and antisymmetric, if all part sets are not empty, then two arbitrary, the concept of relation.

INTRODUCTION

Definition. The relationship between the elements of the set X and Y, or the set X in the set X, is called the relation to any set of parts of the Cartesian product.

The relation R given in set X can be given by enumerating all the pairs of elements taken from set X and connected by this relation.

1- example. X = {4; 5; 6; 7; 9} a relationship in the set

Ye c h i s h. A relation in this set can be given by writing the following set of pairs: {(5; 4), (6; 4), (6; 5), (7; 4), (7; 5), (7; 6), (9; 4), (9; 5), (9; 6), (9; 7)}. The same can be said of drawing.

The R relation in a set can also be given by specifying the properties of all pairs of elements in that R relation. 2- example. Express a relationship in a set of natural numbers.

METHODS

Solution. "X is greater than y", "x is divisible by y", "x is 3 times y", etc.

It is well known that if an arbitrary element in set X can be said to have an R relation to itself, then the relation in set X is a reflexive relation. This is called the reflexive property of the relationship of parallelism and equality. For example, the number 4 is equal to 4, or any straight line in a plane is parallel to itself. Reflexivity is not appropriate for a voluntary approach. For example, in set X, there is no intersection that can be called perpendicular to itself.

If the element x in the set X is in relation to the element y and the element y is in relation to the element R, then the relation R in the set X is a symmetric relation. This is called the symmetry property of parallel, perpendicular equality relations.

If for different x and y elements of the set X the result is that the element x has a relationship R with the element y, then the relation R in the set X is an antisymmetric relation.

If it follows from the fact that the element x in the set X has a relation R with the element y, and that the element y has a relation R with the element z, and that the element x has a relation R with the element z, . This relationship is called the transitive property. There are also non-transitory relationships. For example, if a is perpendicular to b and b is c perpendicular to c, then a is not perpendicular to c.

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2; 3; 4; 4> 6; Equality in a set of 61 fractions

the ratio is bcrilgan. What are the characteristics of a given attitude?

Solution. Reflexive because an arbitrary fraction is equal to itself;

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From the equation of the fraction ax to the hyss, the fraction b is equal to the fraction a, i.e. symmetric;

From the equation of a fraction to a fraction b and y fraction b to a fraction b, the fraction a is equal to the fraction c, i.e. transitive.

Thus, the equality relation of fractions is a reflexive, symmetrical, and transitive relation. In this case, it is said to be an equivalence relationship. For example, the parallelism of a straight line is not the equivalence of figures.

If the relation R given in set X is transitive and antisymmetric, then this relation is called the order relation. A set X is called an ordered set because of the order in which it is given. For example, X = {2; 8; 12; 32} The set can be sorted using the "small" relation or can also be executed using the "multiple" relation. Keep in mind that the pair of numbers 8 and 12 is not related to the "multiple" relationship, because the number 8 is not a multiple of 12 or the number 12 is not a multiple of 8

The word order occurs in every step of the way in math. You can talk about the order of words in a sentence, the order in which you write the solution of an equation, for example, the order in which you perform actions.

For example, when calculating (17 - 12) • 18 = 90, first subtract, then multiply.

X = {3; 1; 5; 2; Let us construct a graph of the relation «x <y» in the set 4}: <? = {(!; 2), (1; 3), (1; 4), (1; 5), (2; 3), (2; 4), (2; 5), (3; 4), (3; 5), (4; 5)}.

College b A set of students can be divided into a set of students in the same course and a set of students in the same course. If the study lasts 4 years, then there are four sets: first-year students, second-year students, third-year students and fourth-year students. Neither of these sets has a common element, as a student cannot study in both first and second year at the same time, but the combination of these sets will be the set of all students. It says that the set of students consists of four non-intersecting sets of students A, B, C, D.

Set X can also be divided into non-intersecting sets, such as the age group for girls and boys, and so on.

In general, if all part sets are empty, the two randomly intersect; if the combination of all the parts of a set constitutes a given set, it is said to be subdivided into a given set.

The number 5 is four units to the right of 1, so 5> 1! ______________________

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0 1 2 3 4 || j 6 7 8

The number 2 is 7 to five units to the left, so 2 <7

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0 1 .1! 3 4 5 6 7 8

RESULTS

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DISCUSSION

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CONCLUSION

It is well known that if an arbitrary element in set X can be said to have an R relation to itself, then the relation in set X is a reflexive relation. This is called the reflexive property of the relationship of parallelism and equality. For example, the number 4 is equal to 4, or any straight line in a plane is parallel to itself. Reflexivity is not appropriate for a voluntary approach. For example, in set X, there is no intersection that can be called perpendicular to itself.

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