**SOME PROPERTIES OF THE DISTANCE BETWEEN TWO POINTS**

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**Abstract:** This article outlines the use of the most important properties of the distance between two points when teaching the concept of metric space.

**Key words:** metric, discrete metric, open and closed sphere, open and closed set, continuous reflection, short reflection.

**Introduction**

In order to instruct students to think conceptually, it is valuable to generalize a few of the properties that are fitting in a straight line or plane. In this paper, we have attempted to achieve the objective by presenting the concept of metric space, which is considered by recognizing the characteristic properties that have a remove between two focuses. In specific, we accept that the illustrations displayed in this article will increment the reader's intrigued and permit for a deeper study of the subject.

It is known that the distance between two points can be determined in different ways. For example, the distance between Paris and Rome can be determined by air, road or water. In general, and as the distance between points, these two variables have the following properties [1]:

1)  va  

2) 

3) 

When variables such as are elements of a particular set, the function is called a metric in that set, and the set is called a metric space relative to the metric. The distance between any two points in a set, that is, the metric, allows us to determine many of the concepts in that set.

Examples include the approximation of a sequence of elements of a set, the point of attempt, the limit point, open and closed spheres, open and closed sets, continuous reflection, and abbreviated reflections. Using the concept of abbreviations, it is possible to determine whether there are solutions to some equations.

Below we look at some examples of metrics that satisfy the above three conditions





a set in the form defined by the metrics given in the set is called an open sphere in

the set. The point is called the center of the sphere and its radius.

If all real numbers in the set are defined by simple metric equations, then the open spheres are in the form of intervals. in a set of points in a plane and the metric between points the formula says that the open spheres in it consist of all the interior points of the circle.

**Conclusion**

Given that metrics can be defined differently in the same set, we solve the following problem [2].

1. In a metric space, can a sphere with a large radius lie inside a sphere with a small radius.

Solution: Let the metrics be defined as follows:

, 

However

, , 

and



assuming that the equation holds for the sphere. the sphere is defined by equality, i.e. the relation is satisfied. So a sphere with a radius of 6 lies inside a sphere with a radius of 5.

If we define the metric of a non-empty set by the following equation, the above metric conditions are met and this metric is called discrete metrics. There are two types of balloons in this metric. If the inequality holds for the sphere, then the sphere consists of a single point, and if so, the sphere overlaps with the whole space.

The set X contains metrics. If it is, and the number sequence tends to 0, then the sequence is called convergent, and in this case is denoted by a view.

Because multiple metrics can be identified in a set, a given sequence can be approximated by one metric and not approximated by another metric. For example, only stationary sequences can be approximated to discrete metrics.

In order  sequence  to be close to any  if we find such a number for the number  inequality all satisfactory for  and  inequality must be satisfied. If  a discrete metric  inequality all satisfactory for ’s,  should be done that is  the sequence must be stationary. We know that for simple metrics  The set of rational numbers  with respect to  is a metric space, and the sequence determined by the equation is close to 0. and the sequence defined by the equation does not approach. In the following, we define a metric in a set such that the sequence is convergent, not convergent.

2.  a set of rational numbers and a prime number.  a rational number satisfy the inequality. Any rational number can only be expressed in the same form, here, and  should be. In that case and the distance between and rational numbers

can be identified by the Equality is appropriate here



There  we considered equality appropriate. For instance if , , ,  , initially ,  form and  and  separation - we can write by a prime number , because . So,  ,  and the distance between the rational numbers which is 5.

In the included function set  we show the metric satisfaction.

1.  va  used in the *p* construction of condition fulfillment functions.
2. The condition is also fulfilled directly.
3. Prove that the condition is satisfied. For this  because the value of the function depends on the difference and the prime number.

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There ;  was taken. If  if the inequality is satisfied,



because equality is fulfilled  va  and the fraction is irreducible. So, .

  check that the sequence tends to 0:



to be,  the sequence does not approach 0, i.e. the sequence does not approach. Conversely, because the sequence defined by the equation tends to 0



to be  should be done. It is clear that both of the above problems are not relevant to simple metrics in a straight line or plane.

**References**

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