Mathematics

Abstract

Mathematics is a subject that studies the concepts of quantity, structure, change, space and information, and it is a kind of form science.
In the development of human history and social life, mathematics also plays an irreplaceable role, but also to learn and study the basic tools of modern science and technology..

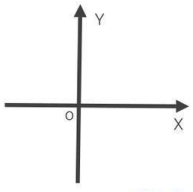
Introduction

Many mathematical objects such as number, reaction function, such as the geometry in which the definition of the internal structure of the continuous operation or relationship. The mathematics study the properties of these structures, such as: how to number theory in integer arithmetic operations. In addition, different structures have the similar nature of things often happen, which makes further abstract, then through to the structure of a class axioms to describe their state becomes possible, need to study is for all structure found in structure satisfying these axioms. Therefore, we can study groups, rings, fields and other abstract systems. These studies (through the structure defined by algebraic operations) can form abstract because the field of algebra. Abstract algebra has the versatility greatly, it often can be applied to some seemingly unrelated problems, such as some Ancient ruler and compasses finally using Galois theory to solve the, it relates to the domain theory and group theory. Another example of algebra theory is linear algebra, it the elements with quantity and direction of a vector space to make a general study on. These phenomena show that the original was thought to be not related to the geometric and algebraic actually has a strong correlation. Study of combinatorics enumeration method of satisfying the given structure of objects

Problem solving

1 .The point is a point in space but the vector is a line in space and the direction of the vector is one way.

2 right handed coordinate system;The plane painted two mutually perpendicular, and the origin of the public number. The horizontal axis is the X axis, the vertical axis is the Y axis. In this way, we can say that the plane rectangular coordinate system is established. Is also divided into the first quadrant, the second quadrant, the third quadrant, the fourth quadrant. Starting from the top right corner, counting counterclockwise.



X轴Y轴

3 In mathematics, the number of products is to accept the two vector on the real R and return to a real value of the scalar two. It is the standard inner product of Euclidean space.

Two vectors a = A2, [a1,... , an] and B = [b1, b2,... , the dot product of bn] is defined as:

B=a1b1+a2b2+ and a..... +anbn.

The use of matrix multiplication and vector (orthostichy) as n * 1 dot matrix, can also be written:

A, b=a*b^T, b^T here indicating matrix transpose of B.

4 Vector b projection on the vector a is a vector, may wish to remember to do C

C and B are collinear, depending on the direction of a and B angle

|c|=|a|*|cos<a, b>|

When cos<a, b><0, C and B in the opposite direction; otherwise the same direction

5 **parametric equation** A two point A (X, Y), B (X, Y

Answer: A B dreams, the slope of the line k=tan alpha =m/L, which m=y -y L=x -x,

Aerodynamic parameter equation can be written as:

X=x +Lt y=y +mt.;

Or written:

X=x +t cos y=y +t sin alpha; alpha.

6 How to convert a vector into a unit vector, for example (3,1,1) how to convert. To calculate the $3^2 +1^2 +^2$ = 11

The X Y Z were divided by the appropriate 11

Get the unit vector.

(3/ * 11, 1/ * 11, 1/ * 11)

7 Write a parametric equation for a plane given three points.For example: space in a (1, - 1), B (1 0,2), C (2,1,3) shilling the plane equation for AX+BY+CZ+D=0, the normal vector also is n (a, B, c). (I defer to a as a (1, 2, 1) the.)

By A, B, C three can determine the two vector AB (0,2, -3) and AC (1, -1,4). The geometric knowledge can know, the normal vector and AB vector and AC respectively. The next vertical there are two ways to solve this problem.

Method 1: n respectively, the dot product of the vectors AB and AC are equivalent to the 0. A set of equations, solution a, B, C three between relations, also is to use one of the said two other (such as C said a and b). Finally, substituting a, get the relationship between D and C, and to eliminate the unknowns, will have to answer. Finally, of course, can also be into two, direct solution of the equation.

Summary

Mathematics for us is very helpful, so to learn more about mathematics knowledge. After the

game to write code to use the relevant knowledge**.**