Why

Definition

A matrix A is *positive definite* if all its quadratic forms are positive.

Notation

Let $A \in \mathbf{R}^{n \times n}$. A is positive definite if for every $x \in \mathbf{R}^d$,

$$x^T A x > 0.$$

We denote the set of real-valued positive definite d by d matrices by $\mathbf{S}^d_{++}$.

Positive Definite Matrices

Quadratic Forms

Symmetric Matrices

Identity Matrices

Real Matrices

Real Vectors

Matrices

Vectors

N-Dimensional Space

Fields

Real Numbers

Space

Groups

Rational Numbers

Algebras

Integer Numbers

Operations

Functions

Zero

Relations

Natural Numbers

Ordered Pairs

Equation Solutions

Set Intersections

Set Unions

Empty Set

Unordered Pairs

Set Specification

Equations

Set Inclusion

Sentences

Set Equality

Sets

Identity

Objects