Why

TODO

Definition

An *orthonormal* matrix is a matrix whose columns are an orthonormal family of vectors.

Some authors call these *orthogonal* matrices or *real orthogonal* or *unitary* matrices.

Notation

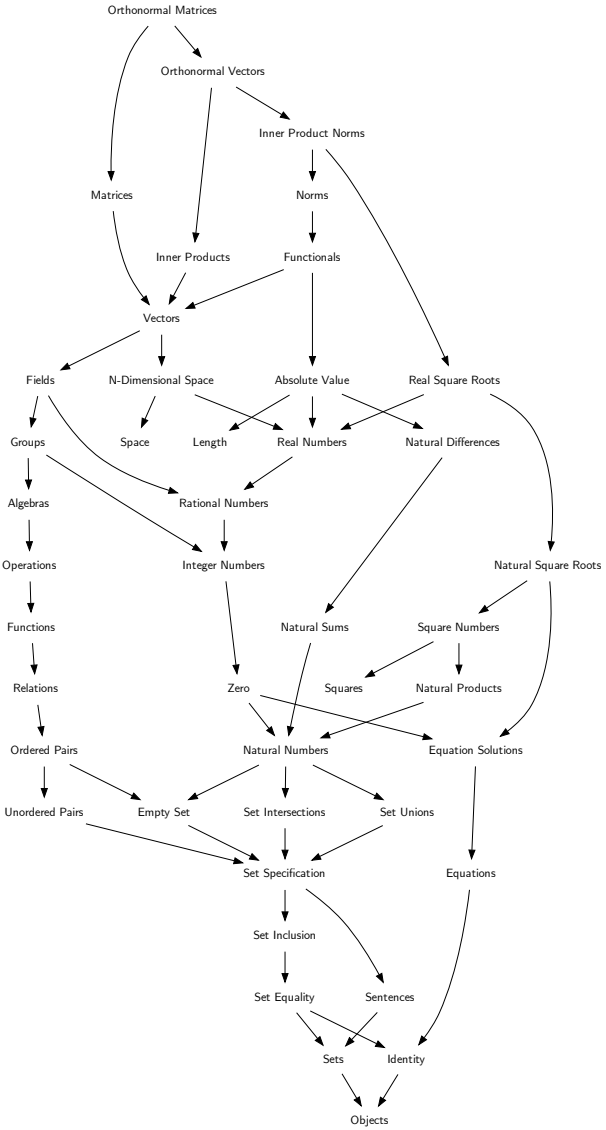
Let $A \in \mathbf{F}^{m \times n}$. Something something

$$AA^T = I.$$

Characterizations

Proposition **1.** *A matrix is orthonormal if and only if its transpose product with the matrix is the identity.*

Proposition **2.** *A matrix is orthonormal if and only if its transpose is orthonormal.*


Orthonormal Matrices
Orthonormal Vectors
Inner Product Norms
Matrices
Norms
Inner Products
Functionals
Vectors
Fields
N-Dimensional Space
Absolute Value
Real Square Roots
Groups
Space
Length
Real Numbers
Natural Differences
Algebras
Rational Numbers
Operations
Integer Numbers
Natural Square Roots
Functions
Natural Sums
Square Numbers
Relations
Zero
Squares
Natural Products
Ordered Pairs
Natural Numbers
Equation Solutions
Unordered Pairs
Empty Set
Set Intersections
Set Unions
Set Specification
Equations
Set Inclusion
Set Equality
Sentences
Sets
Identity
Objects