

Description	Syntax	Remarks and examples	Conformability
Diagnostics	Reference	Also see	

Description

Dmatrix(*n*) returns the $n^2 \times n(n+1)/2$ duplication matrix *D* for which $D \cdot \text{vech}(X) = \text{vec}(X)$, where *X* is an arbitrary $n \times n$ symmetric matrix.

Syntax

real matrix **Dmatrix**(*real scalar n*)

Remarks and examples

Duplication matrices are frequently used in computing derivatives of functions of symmetric matrices. Section 9.5 of [Lütkepohl \(1996\)](#) lists many useful properties of duplication matrices.

Conformability

Dmatrix(*n*):
 n: 1×1
 result: $n^2 \times n(n+1)/2$

Diagnostics

Dmatrix(*n*) aborts with error if *n* is less than 0 or is missing. *n* is interpreted as [trunc\(*n*\)](#).

Reference

Lütkepohl, H. 1996. *Handbook of Matrices*. New York: Wiley.

Also see

[M-5] [Kmatrix\(\)](#) — Commutation matrix

[M-5] [Lmatrix\(\)](#) — Elimination matrix

[M-5] [vec\(\)](#) — Stack matrix columns

[M-4] [Standard](#) — Functions to create standard matrices

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