

Lmatrix() — Elimination matrix

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Description

`Lmatrix(n)` returns the $n(n+1)/2 \times n^2$ elimination matrix *L* for which $L \cdot \text{vec}(X) = \text{vech}(X)$, where *X* is an $n \times n$ symmetric matrix.

Syntax

real matrix `Lmatrix(real scalar n)`

Remarks and examples

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Elimination matrices are frequently used in computing derivatives of functions of symmetric matrices. Section 9.6 of [Lütkepohl \(1996\)](#) lists many useful properties of elimination matrices.

Conformability

`Lmatrix(n)`:
n: 1×1
result: $n(n+1)/2 \times n^2$

Diagnostics

`Lmatrix(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] [Dmatrix\(\)](#) — Duplication matrix

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

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

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