

Lmatrix() — Elimination matrix

Syntax	Description	Remarks and examples	Conformability
Diagnostics	Reference	Also see	

Syntax

real matrix `Lmatrix(real scalar n)`

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.

Remarks and examples

[stata.com](#)

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