blockdiag() — Block-diagonal matrix

Syntax

```
numeric matrix  blockdiag(numeric matrix Z1, numeric matrix Z2)
```

Description

blockdiag(Z1, Z2) returns a block-diagonal matrix with Z1 in the upper-left corner and Z2 in the lower right, that is,

\[
\begin{bmatrix}
Z_1 & 0 \\
0 & Z_2
\end{bmatrix}
\]

Z_1 and Z_2 may be either real or complex and need not be of the same type.

Remarks and examples

To create a block diagonal matrix of Z_1, Z_2, Z_3, code

```
: blockdiag(Z1, blockdiag(Z2,Z3))
```

Conformability

blockdiag(Z1, Z2):

- Z1: \( r_1 \times c_1 \)
- Z2: \( r_2 \times c_2 \)
- result: \( r_1 + r_2 \times c_1 + c_2 \)

Diagnostics

None. Either or both Z_1 and Z_2 may be void.

Also see

[M-4] standard — Functions to create standard matrices