Language	MATLAB/Octave	Python	R	

Input is a 3,4 array	`a = [ 11 12 13 14 ...`
	`21 22 23 24 ...`
	`31 32 33 34 ]`
		`a = array([[ 11, 12, 13, 14 ],`
		`[ 21, 22, 23, 24 ],`
		`[ 31, 32, 33, 34 ]])`
			`a <- rbind(c(11, 12, 13, 14),`
			`c(21, 22, 23, 24),`
			`c(31, 32, 33, 34))`
				$\begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \end{bmatrix}$

Element 2,3 (row,col)	`a(2,3)`	`a[1,2]`	`a[2,3]`	a_{23}
First row	`a(1,:)`	`a[0,]`	`a[1,]`	$\begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \end{bmatrix}$
First column	`a(:,1)`	`a[:,0]`	`a[,1]`	$\begin{bmatrix} a_{11} \\ a_{21} \\ a_{31} \end{bmatrix}$
Array as indices	`a([1 3],[1 4]);`	`a.take([0,2]).take([0,3], axis=1)`		$\begin{bmatrix} a_{11} & a_{14} \\ a_{31} & a_{34} \end{bmatrix}$
All, except first row	`a(2:end,:)`	`a[1:,]`	`a[-1,]`	$\begin{bmatrix} a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \end{bmatrix}$
Last two rows	`a(end-1:end,:)`	`a[-2:,]`		$\begin{bmatrix} a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \end{bmatrix}$
Strides: Every other row	`a(1:2:end,:)`	`a[::2,:]`		$\begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{31} & a_{32} & a_{33} & a_{34} \end{bmatrix}$
Third in last dimension (axis)		`a[...,2]`		
All, except row,column (2,3)			`a[-2,-3]`	$\begin{bmatrix} a_{11} & a_{13} & a_{14} \\ a_{31} & a_{33} & a_{34} \end{bmatrix}$
Remove one column	`a(:,[1 3 4])`	`a.take([0,2,3],axis=1)`	`a[,-2]`	$\begin{bmatrix} a_{11} & a_{13} & a_{14} \\ a_{21} & a_{23} & a_{24} \\ a_{31} & a_{33} & a_{34} \end{bmatrix}$
Diagonal		`a.diagonal(offset=0)`		$\begin{bmatrix} a_{11} & a_{22} & a_{33} & a_{44} \end{bmatrix}$