Language	MATLAB/Octave	Python	R	
Elementwise operations	`a .* b`	`a * b` or `multiply(a,b)`	`a * b`	$\begin{bmatrix} 1 & 5 \\ 9 & 16 \end{bmatrix}$
Matrix product (dot product)	`a * b`	`matrixmultiply(a,b)`	`a %*% b`	$\begin{bmatrix} 7 & 10 \\ 15 & 22 \end{bmatrix}$
Inner matrix vector multiplication $a \cdot b'$		`inner(a,b)` or		$\begin{bmatrix} 5 & 11 \\ 11 & 25 \end{bmatrix}$
Outer product		`outer(a,b)` or	`outer(a,b)` or `a %o% b`	$\begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 4 & 6 & 8 \\ 3 & 6 & 9 & 12 \\ 4 & 8 & 12 & 16 \end{bmatrix}$
Cross product			`crossprod(a,b)` or `t(a) %*% b`	$\begin{bmatrix} 10 & 14 \\ 14 & 20 \end{bmatrix}$
Kronecker product	`kron(a,b)`	`kron(a,b)`	`kronecker(a,b)`	$\begin{bmatrix} 1 & 2 & 2 & 4 \\ 3 & 4 & 6 & 8 \\ 3 & 6 & 4 & 8 \\ 9 & 12 & 12 & 16 \end{bmatrix}$
Matrix division, $b \cdot a^{-1}$	`a / b`			
Left matrix division, $b^{-1} \cdot a$ (solve linear equations)	`a \ b`	`linalg.solve(a,b)`	`solve(a,b)`	$Ax = b$
Vector dot product		`vdot(a,b)`		
Cross product		`cross(a,b)`		