rowSwap()

Catalog >

rowSwap(*Matrix1*, *rIndex1*, *rIndex2***)** ⇒ *matrix*

Returns *Matrix1* with rows *rIndex1* and *rIndex2* exchanged.

$$\begin{bmatrix}1 & 2\\ 3 & 4\\ 5 & 6\end{bmatrix}\rightarrow mat \qquad \begin{bmatrix}1 & 2\\ 3 & 4\\ 5 & 6\end{bmatrix}$$

$$\text{rowSwap}(mat,1,3) \qquad \begin{bmatrix}5 & 6\\ 3 & 4\\ 1 & 2\end{bmatrix}$$

rref()

Catalog >

rref(*Matrix1*[, *Tol*]**)** ⇒ *matrix*

Returns the reduced row echelon form of *Matrix1*.

$$\text{rref}\left(\begin{bmatrix}-2 & -2 & 0 & -6\\ 1 & -1 & 9 & -9\\ -5 & 2 & 4 & -4\end{bmatrix}\right) \qquad \begin{bmatrix}1 & 0 & 0 & \frac{66}{71}\\ 0 & 1 & 0 & \frac{147}{71}\\ 0 & 0 & 1 & \frac{-62}{71}\end{bmatrix}$$

mRow()

Catalog >

mRow(*Expr*, *Matrix1*, *Index***)** ⇒ *matrix*

Returns a copy of *Matrix1* with each element in row *Index* of *Matrix1* multiplied by *Expr*.

$$\text{mRow}\left(\frac{-1}{3},\begin{bmatrix}1 & 2\\ 3 & 4\end{bmatrix},2\right) \qquad \begin{bmatrix}1 & 2\\ -1 & \frac{-4}{3}\end{bmatrix}$$

mRowAdd()

Catalog >

mRowAdd(*Expr*, *Matrix1*, *Index1*, *Index2***)** ⇒ *matrix*

Returns a copy of *Matrix1* with each element in row *Index2* of *Matrix1* replaced with:

Expr · row *Index1* + row *Index2*

$$\text{mRowAdd}\left(-3,\begin{bmatrix}1 & 2\\ 3 & 4\end{bmatrix},1,2\right) \qquad \begin{bmatrix}1 & 2\\ 0 & -2\end{bmatrix}$$

$$\text{mRowAdd}\left(n,\begin{bmatrix}a & b\\ c & d\end{bmatrix},1,2\right) \qquad \begin{bmatrix}a & b\\ a\cdot n+c & b\cdot n+d\end{bmatrix}$$

rowAdd()

Catalog >

rowAdd(*Matrix1*, *rIndex1*, *rIndex2***)** ⇒ *matrix*

Returns a copy of *Matrix1* with row *rIndex2* replaced by the sum of rows *rIndex1* and *rIndex2*.

$$\text{rowAdd}\left(\begin{bmatrix}3 & 4\\ -3 & -2\end{bmatrix},1,2\right) \qquad \begin{bmatrix}3 & 4\\ 0 & 2\end{bmatrix}$$

$$\text{rowAdd}\left(\begin{bmatrix}a & b\\ c & d\end{bmatrix},1,2\right) \qquad \begin{bmatrix}a & b\\ a+c & b+d\end{bmatrix}$$