

# Idioms

Key to the types and ranks of the arguments in the idioms:

Type	Description
C	Character
B	Boolean
N	Numeric
P	Nested
X	any type

Rank	Description
S	Scalar or single item vector
V	Vector
M	Matrix
A	Array of any rank

The idioms described below must be entered precisely as shown to be recognised.

Idiom	Description
$\rho\rho XA$	The rank of $XA$ (returned as a one-element vector)
$\neq\rho XA$	The rank of $XA$ (returned as a scalar)
$BV/\iota NS$	The subset of $NS$ corresponding to the 1s in $BV$
$BV/\iota\rho XV$	The positions in $XV$ corresponding to the 1s in $BV$
$NA>''cXV$	The subset of $XV$ in the index positions defined by $NA$ (equivalent to $XV[NA]$ )
$XA_1\{ \}XA_2$	$XA_1$ and $XA_2$ are ignored (no result produced)
$XA_1\{\alpha\}XA_2$	$XA_1$ ( $XA_2$ is ignored)
$XA_1\{\omega\}XA_2$	$XA_2$ ( $XA_1$ is ignored)
$XA_1\{\alpha \omega\}XA_2$	$XA_1$ and $XA_2$ as a two item vector ( $XA_1 XA_2$ )
$\{0\}XA$	0 irrespective of $XA$
$\{0\}''XA$	0 corresponding to each item of $XA$
$,/PV$	The enclose of the items of $PV$ catenated along their last axes
$\bar{,}/PV$	The enclose of the items of $PV$ catenated along their first axes
$\Rightarrow\phi XA$	The item in the top right of $XA$ ( $\square ML < 2$ )
$\uparrow\phi XA$	The item in the top right of $XA$ ( $\square ML \geq 2$ )
$\Rightarrow\phi, XA$	The item in the bottom right of $XA$ ( $\square ML < 2$ )
$\uparrow\phi, XA$	The item in the bottom right of $XA$ ( $\square ML \geq 2$ )
$0=\rho XV$	1 if $XV$ has a shape of zero, 0 otherwise
$0=\rho\rho XA$	1 if $XA$ has a rank of zero (scalar), 0 otherwise
$0=\equiv XA$	1 if $XA$ has a depth of zero (simple scalar), 0 otherwise
$XM_1\{(\downarrow\alpha)\iota\downarrow\omega\}XM_2$	A simple vector comprising as many items as there are rows in $XM_2$ , where each item is the number of the first row in $XM_1$ that matches each row in $XM_2$ .
$\downarrow\phi\uparrow PV$	A nested vector comprising vectors that each correspond to a position in the original vectors of $PV$ – the first vector contains the first item from each vector in $PV$ , padded to be the same length as the largest vector, and so on ( $\square ML < 2$ )
$\downarrow\phi\Rightarrow PV$	A nested vector comprising vectors that each correspond to a position in the original vectors of $PV$ – the first vector contains the first item from each vector in $PV$ , padded to be the same length as the largest vector, and so on ( $\square ML \geq 2$ )
$\wedge\backslash' '=CA$	A Boolean mask indicating the leading blank spaces in each row of $CA$
$+/\wedge\backslash' '=CA$	The number of leading blank spaces in each row of $CA$
$+/\wedge\backslash BA$	The number of leading 1s in each row of $BA$
$\{(\vee\backslash' '\neq\omega)/\omega\}CV$	$CV$ without any leading blank spaces
$\{(+/\wedge\backslash' '= \omega)\downarrow\omega\}CV$	$CV$ without any leading blank spaces

Idiom	Description
$\sim o' \ ' \ \downarrow CA$	A nested vector comprising simple character vectors constructed from the rows of $CA$ (which must be of depth 1) with all blank spaces removed
$\{ (+/\backslash \ ' \ ' \neq \phi \omega) \uparrow \ \downarrow \omega \} CA$	A nested vector comprising simple character vectors constructed from the rows of $CA$ (which must be of depth 1) with trailing blank spaces removed
$\rho \ \rho \ \cdot \cdot \ XA$	The length of the first axis of each item in $XA$ ( $\square ML < 2$ )
$\uparrow \ \rho \ \cdot \cdot \ XA$	The length of the first axis of each item in $XA$ ( $\square ML \geq 2$ )
$XA_1, \leftarrow XA_2$	$XA_1$ redefined to be $XA_1$ with $XA_2$ catenated along its last axis
$XA_1; \leftarrow XA_2$	$XA_1$ redefined to be $XA_1$ with $XA_2$ catenated along its first axis
$\{ (\leftarrow \Phi \omega) \ \square \omega \} XA$	$XA$ with the major cells sorted into numerical/alphabetical order
$\{ (\leftarrow \Psi \omega) \ \square \omega \} XA$	$XA$ with the major cells sorted into reverse numerical/alphabetical order
$\{ \omega [ \Phi \omega ] \} XV$	$XV$ sorted into numerical/alphabetical order
$\{ \omega [ \Psi \omega ] \} XV$	$XV$ sorted into reverse numerical/alphabetical order
$\{ \omega [ \Phi \omega ; ] \} XM$	$XM$ with the rows sorted into numerical/alphabetical order
$\{ \omega [ \Psi \omega ; ] \} XM$	$XM$ with the rows sorted into reverse numerical/alphabetical order
$1 \equiv XA$	1 if $XA$ has a depth of 1 (simple array), 0 otherwise
$1 \equiv , XA$	1 if $XA$ has a depth of 0 or 1 (simple scalar, vector, etc.), 0 otherwise
$0 \in \rho XA$	1 if $XA$ is empty, 0 otherwise
$\sim 0 \in \rho XA$	1 if $XA$ is not empty, 0 otherwise
$\uparrow / XA$	The first sub-array along the first axis of $XA$
$\uparrow / XA$	The first sub-array along the last axis of $XA$
$\uparrow / XA$	The last sub-array along the first axis of $XA$
$\uparrow / XA$	The last sub-array along the last axis of $XA$
$\ast \circ NA$	Euler's idiom (accurate when $NA$ is a multiple of $0J0.5$ )
$0 \Rightarrow \rho XA$	1 if $XA$ has an empty first dimension, 0 otherwise ( $\square ML < 2$ )
$0 \neq \rho XA$	1 if $XA$ does not have an empty first dimension, 0 otherwise ( $\square ML < 2$ )
$\lfloor 0.5 + NA$	The content of $NA$ with each item rounded to the nearest integer
$XA \downarrow \sim \leftarrow NS$	$XA$ redefined to be $XA$ with the last $-NS$ items along the leading axis removed; $NS$ should be negative
$\square AV \iota CA$	<i>Classic edition only:</i> The character numbers (atomic vector index) corresponding to the characters in $CA$