Idiom Library

	GRADE UP “	
1.	Progressive index of (without replacement)	X„A1; Y„A1
	((½X)½““X¼X,Y)¼(½Y)½““X¼Y,X	
2.	Ascending cardinal numbers (ranking, shareable)	X„D1
	˜.5×(““X)+²““²X	
3.	Cumulative maxima (—\) of subvectors of Y indicated by X	X„B1; Y„D1
	Y[A¼—\A„“A[“(+\X)[A„“Y]]]	
4.	Cumulative minima (˜\) of subvectors of Y indicated by X	X„B1; Y„D1
	Y[A¼—\A„“A[“(+\X)[A„”Y]]]	
5.	Progressive index of (without replacement)	X„A1; Y„A1
	((“X¼X,Y)¼¼½X)¼(“X¼Y,X)¼¼½Y	
6.	Test if X and Y are permutations of each other	X„D1; Y„D1
	Y[“Y]^.=X[“X]	
7.	Test if X is a permutation vector	X„I1
	X^.=““X	
8.	Grade up (“) for sorting subvectors of X having lengths Y	X„D1; Y„I1; (½X) „… +/Y
	A[“(+\(¼½Y)¹+\ŒIO,X)[A„“Y]]	
9.	Index of the elements of X in Y	X„D1; Y„D1
	(((1,A)/B)˜1+½Y)[(½Y)‡(+\1,A„(1‡A)¬¯1‡A„A[B])[“B„“A„Y,X]]	
10.	Minima (˜/) of elements of subvectors of Y indicated by X	X„B1; Y„D1
	Y[A[X/“(+\X)[A„“Y]]]	
11.	Grade up (“) for sorting subvectors of Y indicated by X	X„B1; Y„D1
	A[“(+\X)[A„“Y]]	
12.	Occurences of the elements of X	X„D1
	|-š(2,½X)½““X,X	
13.	Sorting rows of matrix X into ascending order	X„D2
	(½X)½(,X)[A[“(,³(²½X)½¼1†½X)[A„“,X]]]	
14.	Adding a new dimension after dimension G Y-fold	G„I0; Y„I0; X„A
	(““(G+1),¼½½X)³(Y,½X)½X	
15.	Sorting rows of matrix X into ascending order	X„D2
	(½X)½(,X)[ŒIO+A[“˜A÷¯1†½X]] ‘ A„(“,X)-ŒIO	
16.	Y smallest elements of X in order of occurrence	X„D1, Y„I0
	((““X)¹¼Y)/X	
17.	Merging X, Y, Z, ... under control of C (mesh)	X„A1; Y„A1; Z„A1; ...

17.	Merging X, Y, Z ... under control of G (mesh)	; G„I1
	(Y,X,Z,...)[““G]	
18.	Merging X and Y under control of G (mesh)	X„A1; Y„A1; G„B1
	(X,Y)[““G]	
19.	Ascending cardinal numbers (ranking, all different)	X„D1
	““X	
20.	Grade down (”) for sorting subvectors of Y having lengths X	X„D1; Y„I1; (½X) „… +/Y
	A[“(+\(¼½Y)¹+\ŒIO,X)[A„”Y]]	
21.	Maxima (—/) of elements of subvectors of Y indicated by X	X„B1; Y„D1
	Y[A[X/“(+\X)[A„”Y]]]	
22.	Grade down (”) for sorting subvectors of Y indicated by X	X„B1; Y„D1
	A[“(+\X)[A„”Y]]	
23.	Y largest elements of X in order of occurrence	X„D1; Y„I0
	((““X)¹¼Y)/X	
24.	Merging X and Y under control of G (mesh)	X„A1; Y„A1; G„B1
	(Y,X)[““G]	
25.	Descending cardinal numbers (ranking, all different)	X„D1
	““X	
26.	Sorting rows of X according to key Y (alphabetizing)	X„A2; Y„A1
	X[“(1+½Y)ƒY¼³X;]	
27.	Diagonal ravel	X„A
	(,X)[“+š(½X),(¼½,X)-ŒIO]	
28.	Grade up according to key Y	Y„A1; X„A1
	“Y¼X	
29.	Test if X is a permutation vector	X„I1
	X[“X]^.=¼½X	
30.	Sorting a matrix into lexicographic order	X„D2
	X[“+šA<.-³a„x,0;]	
31.	Sorting words in list X according to word length	X„C2
	X[“X+.¬' ';]	
32.	Classification of X to classes starting with Y	X„D1;Y„D1;Y<.‰1²y
	A ‘ A[(B/C)-½Y]„B/+\~B„(½Y)	
33.	Rotate first elements (1²) of subvectors of Y indicated by X	X„B1; Y„A1
	Y[“X++\X]	
34.	Doubling quotes (for execution)	X„C1
	(X,'''')[(ŒIO+½X)˜“(¼½X),('''’=X)/¼½X]	
35.	Insertion sort	X„C1; Y„I0; G„I1

35.	Inserting Y's into vector X after indices G	X„C1; Y„I0; G„I1
	(X,'*')[(⌈IO+⍳X)~⍳(⍴⍳X),(Y×⍳G)⍳G]	
36.	Median	X„D1
	X[(⍋X)[⌊.5×⍳X]]	
37.	Index of last maximum element of X	X„D1
	⌽⍳1↑⍒X	
38.	Index of (first) minimum element of X	X„D1
	1↑⍋X	
39.	Expansion vector with zero after indices Y	X„D1; Y„I1
	(⍳X)⍷⍳(⍴⍳X),Y	
40.	Catenating G elements H before indices Y in vector X	X„A1; Y„I1; G„I0; H„A0
	((A⍳H),X)[⍋(A⍳Y),⍴⍳X] ⍘ A„G×⍳,Y	
41.	Catenating G elements H after indices Y in vector X	X„A1; Y„I1; G„I0; H„A0
	(X,A⍳H)[⍋(⍴⍳X),A⍳Y] ⍘ A„G×⍳,Y	
42.	Merging X and Y under control of G (mesh)	X„A1; Y„A1; G„B1
	A ⍘ A[⍋G]„A„Y,X	
43.	Sorting a matrix according to Y:th column	X„D2
	X[⍋X[;Y];]	
44.	Sorting indices X according to data Y	X„I1; Y„D1
	X[⍋Y[X]]	
45.	Choosing sorting direction during execution	X„D1; Y„I0
	⍋X×⍣¯1 1[Y]	
46.	Sorting Y according to X	X„A1; Y„A1
	Y[⍋X]	
47.	Sorting X into ascending order	X„D1
	X[⍋X]	
48.	Inverting a permutation	X„I1
	⍋X	
	GRADE DOWN ⍒	
49.	Reverse vector X on condition Y	X„A1; Y„B0
	X[⍒Y!⍳⍴X]	
50.	Sorting a matrix into reverse lexicographic order	X„D2
	X[⍒+⍀A<.-⍳⍴a„x,0;]	
52.	Reversal (⌽) of subvectors of X having lengths Y	X„D1; Y„I1
	X[⌽⍒+\(⍳⍴X)⍱+\⌈IO,Y]	
53.	Reversal (⌽) of subvectors of Y indicated by X	X„B1; Y„A1
	Y[⌽⍒+\X]	
55.	Indices of ones in logical vector X	X„B1
	(+/X)↑⍒X	
56.	Index of first maximum element of X	X„D1

	1†″X	
57.	Moving all blanks to end of text	X„C1
	X[″' '¬X]	
58.	Sorting X into descending order	X„D1
	X[″X]	
59.	Moving elements satisfying condition Y to the start of X	X„A1; Y„B1
	X[″Y]	
	MATRIX INVERSION / MATRIX DIVISION	
60.	Interpolated value of series (X,Y) at G	X„D1; Y„D1; G„D0
	Gƒ Y X°.*²-ŒIO-¼½X	
61.	Predicted values of exponential (curve) fit	X„D1; Y„D1
	*A+.×(⍟Y) A„X°.*0 1	
62.	Coefficients of exponential (curve) fit of points (X,Y)	X„D1; Y„D1
	A ‘ A[1]„*A[1] ‘ A„(⍟Y) X°.*0 1	
63.	Predicted values of best linear fit (least squares)	X„D1; Y„D1
	A+.×Y A„X°.*0 1	
64.	G-degree polynomial (curve) fit of points (X,Y)	X„D1; Y„D1
	²Y X°.*0,¼G	
65.	Best linear fit of points (X,Y) (least squares)	X„D1; Y„D1
	Y X°.*0 1	
	DECODE *ƒ*	
66.	Binary format of decimal number X	X„I0
	•10ƒ((1+-2⍟-/,X)½2),X	
67.	Barchart of two integer series (across the page)	X„I2; 1½½X „… 2
	' *±⍟'[ŒIO+2ƒX°.‰¼-/,X]	
68.	Case structure with an encoded branch destination	Y„I1; X„B1
	…Y[1+2ƒX]	
69.	Representation of current time (24 hour clock)	
	A ‘ A[3 6]„':' ‘ A„•1000ƒ3†3‡ŒTS	
70.	Representation of current date (descending format)	
	A ‘ A[5 8]„'-' ‘ A„•1000ƒ3†ŒTS	
71.	Representation of current time (12 hour clock)	
	(1²,' ::',3 2⅙ 0•100ƒ12 0 0⌊3†3‡ŒTS),'AP'[1+12^ŒTS[4]],'M'	
73.	Removing duplicate rows	X„A2
	((A¼A)=¼½A„2ƒX^.=³X)šX	
74.	Conversion from hexadecimal to decimal	X„C
	16ƒ-ŒIO-'0123456789ABCDEF'¼³X	
75.	[illegible]	X„C1

75.	Conversion of alphanumeric string into numeric	X„C1
	10ƒ¯1+'0123456789'¼X	
76.	Value of polynomial with coefficients Y at points X	X„D1; Y„D1
	(X°.+,0)ƒY	
77.	Changing connectivity list X to a connectivity matrix	X„C2
	B½A ‘ A[ŒIO+B[1]ƒ-ŒIO-X]„1 ‘ A„(×/B„0 0+—/,X)½0	
78.	Present value of cash flows X at interest rate Y %	X„D1; Y„D0
	(÷1+Y÷100)ƒ²X	
79.	Justifying right	X„C
	(1-(' '=X)ƒ1)²X	
80.	Number of days in month X of years Y (for all leap years)	X„I0; Y„I
	(12½7½31 30)[X]-0—¯1+2ƒ(X=2),[.1](0¬400|Y)-(0¬100|Y)-0¬4|Y	
81.	Number of days in month X of years Y (for most leap years)	X„I0; Y„I
	(12½7½31 30)[X]-0—¯1+2ƒ(X=2),[.1]0¬4|Y	
82.	Encoding current date	
	100ƒ100|3†ŒTS	
83.	Removing trailing blanks	X„C1
	(1-(' '=X)ƒ1)‡X	
84.	Index of first non-blank, counted from the rear	X„C1
	(' '=X)ƒ1	
85.	Indexing scattered elements	X„A; Y„I2
	(,X)[ŒIO+(½X)ƒY-ŒIO]	
86.	Conversion of indices Y of array X to indices of raveled X	X„A; Y„I2
	ŒIO+(½X)ƒY-ŒIO	
87.	Number of columns in array X as a scalar	X„A
	0ƒ½X	
88.	Future value of cash flows X at interest rate Y %	X„D1; Y„D0
	(1+Y÷100)ƒX	
89.	Sum of the elements of vector X	X„D1
	1ƒX	
90.	Last element of numeric vector X as a scalar	X„D1
	0ƒX	
91.	Last row of matrix X as a vector	X„A
	0ƒX	
92.	Integer representation of logical vectors	X„B
	2ƒX	
93.	Value of polynomial with coefficients Y at point	X„D0; Y„D

	X	
	X⍳Y	
	ENCODE ,	
94.	Conversion from decimal to hexadecimal (X=1..255)	X„I
	³'0123456789ABCDEF'[⌊IO+((⍴⍴/16µ,X)½16),X]	
95.	All binary representations up to X (truth table)	X„I0
	((⍳2µ1+X)½2),0,¼X	
96.	Representation of X in base Y	X„D0; Y„D0
	((1+⍳⌈YµX)½Y),X	
97.	Digits of X separately	X„I0
	((1+⍳⌈10µX)½10),X	
98.	Helps locating column positions 1..X	X„I0
	1 0⍴10 10,1-⌊IO-¼X	
99.	Conversion of characters to hexadecimal representation (⎕AV)	X„C1
	,' ',³'0123456789ABCDEF'[⌊IO+16 16,-⌊IO-⎕AV¼X]	
100.	Polynomial with roots X	X„D1
	²((0,¼½X)°.=+⌿š~A)+.×(-X)×.*A„((½X)½2),¯1+¼2*½X	
101.	Index pairs of saddle points	X„D2
	⌊IO+(½X),-⌊IO-(,(X=(½X)½—⌿šX)^X=³(²½X)½⍳/X)/¼×/½X	
102.	Changing connectivity matrix X to a connectivity list	X„C2
	(,X)/1+A,¯1+¼×/A„½X	
103.	Matrix of all indices of X	X„A
	⌊IO+(½X),(¼×/½X)-⌊IO	
104.	Separating a date YYMMDD to YY, MM, DD	X„D
	³(3½100),X	
105.	Indices of elements Y in array X	X„A; Y„A
	⌊IO+(½X),(-⌊IO)+(,X¹Y)/¼½,X	
106.	All pairs of elements of ¼X and ¼Y	X„I0; Y„I0
	⌊IO+(X,Y),(¼X×Y)-⌊IO	
107.	Matrix for choosing all subsets of X (truth table)	X„A1
	((½X)½2),¯1+¼2*½X	
108.	All binary representations with X bits (truth table)	X„I0
	(X½2),¯1+¼2*X	
109.	Incrementing cyclic counter X with upper limit Y	X„D; Y„D0
	1+Y,X	
110.	Decoding numeric code ABBCCC into a matrix	X„I
	10 100 1000,X	
111.	Integer and fractional parts of positive numbers	X„D
	0 1 X	

	⁻1⁄X	
	LOGARITHM µ	
112.	Number of decimals of elements of X	X„D1
	˜10µ(-('.'¬A)/A„•X)÷X	
113.	Number of sortable columns at a time using *f* and alphabet X	X„C1
	˜(1+½X)µ2*(A=¯1+A„2*¼128)¼1	
114.	Playing order in a cup for X ranked players	X„I0
	,³(A½2)½(2*A„-2µX)†¼X	
115.	Arithmetic precision of the system (in decimals)	
	˜|10µ|1-3×÷3	
116.	Number of digitpositions in integers in X	X„I
	1+(X<0)+˜10µ|x+0=x	
117.	Number of digit positions in integers in X	X„I
	1+˜10µ(X=0)+X×1 ¯10[1+X<0]	
118.	Number of digits in positive integers in X	X„I
	1+˜10µX+0=X	
	BRANCH …	
119.	Case structure according to key vector G	X„A0; Y„I1; G„A1
	…Y[G¼X]	
120.	Forming a transitive closure	X„B2
	…ŒLC-¼Ÿ/,(X„XŸXŸ.^X)¬+X	
121.	Case structure with integer switch	X„I0; Y„I1
	…X²Y	
122.	For-loop ending construct	X„I0; Y„I0; G„I0
	…Y-¼G‰X„X+1	
123.	Conditional branch to line Y	X„B0; Y„I0; Y>0
	…Y-¼X	
124.	Conditional branch out of program	X„B0
	…0˜¼X	
125.	Conditional branch depending on sign of X	X„I0; Y„I1
	…Y[2+×X]	
126.	Continuing from line Y (if X>0) or exit	X„D0; Y„I0
	…Y××X	
127.	Case structure using levels with limits G	X„D0; G„D1; Y„I1
	…(X‰G)/Y	
128.	Case structure with logical switch (preferring from start)	X„B1; Y„I1
	…X/Y	
129.	Conditional branch out of program	X„B0
	…0×¼X	
	EXECUTE -	

132.	Test for symmetricity of matrix X	X„A2
	--'1','†‡'[ŒIO+^/(½X)=²½X],'''0~0¹X=³X'''	
133.	Using a variable named according to X	X„A0; Y„A
	-'VAR',(•X),'„Y'	
134.	Rounding to ŒPP precision	X„D1
	-•X	
135.	Convert character or numeric data into numeric	X„A1
	-•X	
136.	Reshaping only one-element numeric vector X into a scalar	X„D1
	-•X	
137.	Graph of F(X) at points X ('X'¹F)	F„A1; X„D1
	' *'[ŒIO+(²(¯1+˜/A)+¼1+(—/A)-˜/A)°.=A„˜.5+-F]	
138.	Conversion of each row to a number (default zero)	X„C2
	(XŸ.¬' ')\1‡-'0 ',,X,' '	
139.	Test for symmetricity of matrix X	X„A2
	-(¯7*A^.=²A„½X)†'0~0¹X=³X'	
140.	Execution of expression X with default value Y	X„D1
	-((X^.=' ')/'Y'),X	
141.	Changing X if a new input value is given	X„A
	X„-,((2†'X'),' ',[.5]A)[ŒIO+~' '^.=A„ ;]	
142.	Definite integral of F(X) in range Y with G steps ('X'¹F)	F„A1; G„D0; Y„D1; ½Y „… 2
	A+.×-F,0½X„Y[1]+(A„--/Y÷G)×0,¼G	
143.	Test if numeric and conversion to numeric form	X„C1
	1‡-'0 ',(^/X¹' 0123456789')/X	
144.	Tests the social security number (Finnish)	Y„'01...9ABC...Z'; 10=½X
	(¯1†X)=((~Y¹'GIOQ')/Y)[1+31|-9†X]	
145.	Conditional execution	X„B0
	-X/'EXPRESSION'	
146.	Conditional branch out of programs	X„L0
	-X/'…'	
147.	Using default value 100 if X does not exist	X„A
	-(¯3*2¬ŒNC 'X')†'X100'	
148.	Conditional execution	X„B0; Y„A1
	-X‡'© ...'	
149.	Giving a numeric default value for input	X„D0
	1½(- ,',¼0'),X	
150.	Assign values of expressions in X to variables named in Y	X„C2; Y„C2
	A„-,',','(','0','½',Y,'„',X,')'	

151.	Evaluation of several expressions; results form a vector	X„A
	-,',',('),',',X,')'	
152.	Sum of numbers in character matrix X	X„A2
	-,'+',X	
153.	Indexing when rank is not known beforehand	X„A; Y„I
	-'X[',((¯1+½½X)½';'),'Y]'	
	FORMAT •	
154.	Numeric headers (elements of X) for rows of table Y	X„D1; Y„A2
	(3²7 0•X°.+,0),•Y	
155.	Formatting a numerical vector to run down the page	X„D1
	•X°.+,0	
156.	Representation of current date (ascending format)	
	A ‘ A[(' '=A)/¼½A]„'.' ‘ A„•²3†ŒTS	
157.	Representation of current date (American)	
	A ‘ A[(' '=A)/¼½A]„'/' ‘ A„•100|1²3†ŒTS	
158.	Formatting with zero values replaced with blanks	X„A
	(½A)½B\(B„,('0'¬A)Ÿ' '¬¯1²A)/,A„' ',•X	
159.	Number of digit positions in scalar X (depends on ŒPP)	X„D0
	½•X	
160.	Leading zeroes for X in fields of width Y	X„I1; Y„I0; X‰0
	0 1‡(2†Y+1)•X°.+,10*Y	
161.	Row-by-row formatting (width G) of X with Y decimals per row	X„D2; Y„I1; G„I0
	((1,G)×½X)½2 1 3³(²G,½X)½(,G,[1.1]Y)•³X	
163.	Formatting X with H decimals in fields of width G	X„D; G„I1; H„I1
	(,G,[1.1]H)•X	
	ROLL / DEAL ?	
164.	Y-shaped array of random numbers within (X[1],X[2]]	X„I1; Y„I1
	X[1]+?Y½--/X	
165.	Removing punctuation characters	X„A1
	(~X¹' .,:;?''')/X	
166.	Choosing Y objects out of ¼X with replacement (roll)	Y„I; X„I
	?Y½X	
167.	Choosing Y objects out of ¼X without replacement (deal)	X„I0; Y„I0
	Y?X	
	GEOMETRICAL FUNCTIONS ±	

168.	Arctan Y÷X	X„D; Y„D
	((X¬0)×¯3±Y÷X+X=0)+±((X=0)×.5××Y)+(X<0)×1-2×y<0	
169.	Conversion from degrees to radians	X„D
	X×±÷180	
170.	Conversion from radians to degrees	X„D
	X×180÷±1	
171.	Rotation matrix for angle X (in radians) counter-clockwise	X„D0
	2 2½1 ¯1 1 1×2 1 1 2±X	
	FACTORIAL / BINOMIAL !	
172.	Number of permutations of X objects taken Y at a time	X„D; Y„D
	(!Y)×Y!X	
173.	Value of Taylor series with coefficients Y at point X	X„D0; Y„D1
	+/Y×(X*A)÷!A„¯1+¼½Y	
174.	Poisson distribution of states X with average number Y	X„I; Y„D0
	(*-Y)×(Y*X)÷!X	
175.	Gamma function	X„D0
	!X-1	
176.	Binomial distribution of X trials with probability Y	X„I0; Y„D0
	(A!X)×(Y*A)×(1-Y)*X-A„-ŒIO-¼X+1	
177.	Beta function	X„D0; Y„D0
	÷Y×(X-1)!Y+X-1	
178.	Selecting elements satisfying condition X, others to 1	X„B; Y„D
	X!Y	
179.	Number of combinations of X objects taken Y at a time	X„D; Y„D
	Y!X	
	INDEX OF ¼	
180.	Removing elements Y from beginning and end of vector X	X„A1; Y„A
	((A¼1)-ŒIO)‡(ŒIO-(²A„~X¹Y)¼1)‡X	
181.	Alphabetical comparison with alphabets G	X„A; Y„A
	(G¼X)	
183.	Sum over elements of X determined by elements of Y	X„D1; Y„D1
	X+.×Y°.=((¼½Y)=Y¼Y)/Y	
184.	First occurrence of string X in string Y	X„A1; Y„A1
	(^š(¯1+¼½X)²X°.=Y)¼1	
185.	Removing duplicate rows	X„A2
	((A¼A)=¼½A„ŒIO++š^™XŸ.¬³X)šX	

186.	First occurrence of string X in matrix Y	X„A2; Y„A1; ¯1†½Y„…½X
	(Y^.=X)¼1	
187.	Indices of ones in logical vector X	X„B1
	(+\X)¼¼+/X	
188.	Executing costly monadic function F on repetitive arguments	X„A1
	(F B/X)[+\B„(X¼X)=¼½X]	
189.	Index of (first) maximum element of X	X„D1
	X¼—/X	
190.	Index of first occurrence of elements of Y	X„C1; Y„C1
	˜/X¼Y	
191.	Index of (first) minimum element of X	X„D1
	X¼˜/X	
192.	Test if each element of X occurs only once	X„A1
	^/(X¼X)=¼½X	
193.	Test if all elements of vector X are equal	X„A1
	^/ŒIO=X¼X	
194.	Interpretation of roman numbers	X„A
	+/A×¯1*A<1²a„0,1000 500 100 50 10 5 1['MDCLXVI'¼X]	
195.	Removing elements Y from end of vector X	X„A1; Y„A
	(ŒIO-(~²X¹Y)¼1)‡X	
196.	Removing trailing blanks	X„C1
	(1-(²' '¬X)¼1)‡X	
198.	Index of last occurrence of Y in X (ŒIO-1 if not found)	X„A1; Y„A
	(¯1 1[2×ŒIO]+½X)-(²X)¼Y	
199.	Index of last occurrence of Y in X (0 if not found)	X„A1; Y„A
	(1+½X)-(²X)¼Y	
200.	Index of last occurrence of Y in X, counted from the rear	X„A1; Y„A
	(²X)¼Y	
201.	Index of first occurrence of G in X (circularly) after Y	X„A1; Y„I0; G„A
	ŒIO+(½X)|Y+(Y²X)¼G	
202.	Alphabetizing X; equal alphabets in same column of Y	Y„C2; X„C
	(¯1†½Y)|(,Y)¼X	
203.	Changing index of an unfound element to zero	Y„A1; X„A
	(1+½Y)|Y¼X	
204.	Replacing elements of G in set X with corresponding Y	X„A1, Y„A1, G„A
	(½G)½A ‘ A[B/¼½B]„Y[(B„B^½Y)/B„X¼A„,G]	

205.	Removing duplicate elements (nub)	X„A1
	((X¼X)=¼½X)/X	
206.	First word in X	X„C1
	(¯1+X¼' ')†X	
207.	Removing elements Y from beginning of vector X	X„A1; Y„A
	(((~X¹Y)¼1)-ŒIO)‡X	
208.	Removing leading zeroes	X„A1
	(¯1+(X='0')¼0)‡X	
209.	Index of first one after index Y in X	G„I0; X„B1
	Y+(Y‡X)¼1	
210.	Changing index of an unfound element to zero (not effective)	X„A; Y„A1
	(X¹Y)×Y¼X	
211.	Indicator of first occurrence of each unique element of X	X„A1
	(X¼X)=¼½X	
212.	Inverting a permutation	X„I1
	X¼¼½X	
213.	Index of first differing element in vectors X and Y	X„A1; Y„A1
	(Y¬X)¼1	
214.	Which elements of X are not in set Y (difference of sets)	X„A; Y„A1
	(ŒIO+½Y)=Y¼X	
215.	Changing numeric code X into corresponding name in Y	X„D; Y„D1; G„C2
	G[Y¼X;]	
216.	Index of key Y in key vector X	X„A1; Y„A
	X¼Y	
217.	Conversion from characters to numeric codes	X„A
	ŒAV¼X	
218.	Index of first satisfied condition in X	X„B1
	X¼1	
	OUTER PRODUCT °.! °.– °.|	
219.	Pascal's triangle of order X (binomial coefficients)	X„I0
	³A°.!A„0,¼X	
220.	Maximum table	X„I0
	(¼X)°.–¼X	
221.	Number of decimals (up to Y) of elements of X	X„D; Y„I0
	0+.¬(–(10*Y)×10*ŒIO-¼Y+1)°.|–X×10*Y	
222.	Greatest common divisor of elements of X	X„I1
	–/(^/0=A°.|X)/A„¼˜/X	

223.	Divisibility table	X„I1
	0=(¼–/X)°.|X	
224.	All primes up to X	X„I0
	(2=+š0=(¼X)°.|¼X)/¼X	
	OUTER PRODUCT °.* °.× °.- °.+	
225.	Compound interest for principals Y at rates G % in times X	X„D; Y„D; G„D
	Y°.×(1+G÷100)°.*X	
226.	Product of two polynomials with coefficients X and Y	X„D1; Y„D1
	+š(ŒIO-¼½X)²X°.×Y,0×1‡X	
228.	Shur product	X„D2; Y„D2
	1 2 1 2³X°.×Y	
229.	Direct matrix product	X„D2; Y„D2
	1 3 2 4³X°.×Y	
230.	Multiplication table	X„I0
	(¼X)°.×¼X	
231.	Replicating a dimension of rank three array X Y-fold	Y„I0; X„A3
	X[;,(Y½1)°.×¼(½X)[2];]	
232.	Array and its negative ('plus minus')	X„D
	X°.×1 ¯1	
233.	Move set of points X into first quadrant	X„D2
	1 2 1³X°.-˜/X	
234.	Test relations of elements of X to range Y; result in ¯2..2	X„D; Y„D; 2=¯1†½Y
	+/×X°.-Y	
235.	Occurrences of string X in string Y	X„A1; Y„A1
	(Y[A°.+¯1+¼½X]^.=X)/A„(A=1†X)/¼½A„(1-½X)‡Y	
236.	Sum of common parts of matrices (matrix sum)	X„D2; Y„D2
	1 2 1 2³X°.+Y	
237.	Adding X to each column of Y	X„D1; Y„D2
	1 1 2³X°.+Y	
238.	Adding X to each column of Y	X„D1; Y„D2
	1 2 1³Y°.+X	
240.	Adding X to each row of Y	X„D1; Y„D2
	2 1 2³X°.+Y	
241.	Adding X to each row of Y	X„D1; Y„D2
	1 2 2³Y°.+X	
242.	Hilbert matrix of order X	X„¼0
	÷¯1+(¼X)°.+¼X	
243.	Moving index of width Y for vector X	X„A1; Y„I0

	(0,¼(½X)-Y)°.+Y	
244.	Indices of subvectors of length Y starting at X+1	X„I1; Y„I0
	X°.+¼Y	
245.	Reshaping numeric vector X into a one-column matrix	X„D1
	X°.+,0	
246.	Annuity coefficient: X periods at interest rate Y %	X„I; Y„D
	((½A)½Y÷100)÷A„³1-(1+Y÷100)°.*-X	
	OUTER PRODUCT °.<°.^ °.‰ °.>	
247.	Matrix with X[i] trailing zeroes on row i	X„I1
	X°.<²¼—/x	
248.	Matrix with X[i] leading zeroes on row i	X„I1
	X°.<¼—/x	
249.	Distribution of X into intervals between Y	X„D; Y„D1
	+/((¯1‡Y)°.^X)^(1‡Y)°.>X	
250.	Histogram (distribution barchart; down the page)	X„I1
	' Œ'[ŒIO+(²¼—/A)°.^A„+/(¼1+(—/X)-˜/X)°.=X]	
251.	Barchart of integer values (down the page)	X„I1
	' Œ'[ŒIO+(²¼—/X)°.^X]	
252.	Test if X is an upper triangular matrix	X„D2
	^/,(0¬X)^A°.^A„¼1†½X	
253.	Number of ?s intersecting ?s (X=starts, Y=stops)	X„D1; Y„D1
	+/A^³A„X°.^Y	
254.	Contour levels Y at points with altitudes X	X„D0; Y„D1
	Y[+šY°.^X]	
255.	X×X upper triangular matrix	X„I0
	(¼X)°.^¼X	
256.	Classification of elements Y into X classes of equal size	X„I0; Y„D1
	+/(A×X÷—/A„Y-˜/Y)°.‰¯1+¼X	
257.	Matrix with X[i] trailing ones on row i	X„I1
	X°.‰²¼—/X	
258.	Comparison table	X„I1
	X°.‰¼—/X,0	
259.	Barchart of X with height Y (across the page)	X„D1; Y„D0
	' Œ'[ŒIO+X°.‰(—/X)×(¼Y)÷Y]	
260.	Barchart of integer values (across the page)	X„I1
	' Œ'[ŒIO+X°.‰¼—/X]	
261.	Matrix with X[i] leading ones on row i	X„I1
	X°.‰¼—/X	
263.	Test if X is a lower triangular matrix	X„D2

	^/,(0¬X)ˆA°.‰A„¼1†½X	
264.	Test if X is within range [Y[1],Y[2])	X„D; Y„D1
	¬/X°.‰Y	
265.	Ordinal numbers of words in X that indices Y point to	X„C1; Y„I
	ŒIO++/Y°.‰(' '=X)/¼½X	
266.	Which class do elements of X belong to	X„D
	+/X°.‰0 50 100 1000	
267.	X×X lower triangular matrix	X„I0
	(¼X)°.‰¼X	
268.	Moving all blanks to end of each row	X„C
	(½X)½(,(+/A)°.>-ŒIO-¼¯1†½X)\(,A„X¬' ')/,X	
269.	Justifying right fields of X (lengths Y) to length G	X„A1; Y„I1; G„I0
	(,Y°.>²(¼G)-ŒIO)\X	
270.	Justifying left fields of X (lengths Y) to length G	X„A1; Y„I1; G„I0
	(,Y°.>(¼G)-ŒIO)\X	
	OUTER PRODUCT °.¬ °.=	
271.	Indices of elements of Y in corr. rows of X (X[i;]¼Y[i;])	X„A2; Y„A2
	1++/^\1 2 1 3³Y°.¬X	
273.	Indicating equal elements of X as a logical matrix	X„A1
	³X°.=(1 1³<\x°.=x)/x	
275.	Changing connection matrix X (¯1 … 1) to a node matrix	X„I2
	(1 ¯1°.=³X)+.×¼1†½Œ„X	
276.	Sums according to codes G	X„A; Y„D; G„A
	(G°.=X)+.×Y	
277.	Removing duplicate elements (nub)	X„A1
	(1 1³<\x°.=x)/x	
278.	Changing node matrix X (starts,ends) to a connection matrix	X„I2
	-/(¼—/,X)°.=³X	
279.	Test if all elements of vector X are equal	X„B1
	Ÿ/^/0 1°.=X	
280.	Test if elements of X belong to corr. row of Y (X[i;]¹Y[i;])	X„A2; Y„A2; 1†½X„…1†½Y
	Ÿ/1 2 1 3³X°.=Y	
281.	Test if X is a permutation vector	X„I1
	^/1=+/X°.=¼½X	
282.	Occurrences of string X in string Y	X„C1; Y„C1
	(^š(¯1+¼½X)²(X°.=Y),0)/¼1+½Y	

283.	Division to Y classes with width H, minimum G	X„D; Y„I0; G„D0; H„D0
	+/(¼Y)°.=⌊(X-G)÷H	
285.	Repeat matrix	X„A1; Y„A1
	(((¯1²~A)^A„(¯1‡X=1²X),0)/Y)°.=Y	
286.	X×X identity matrix	X„I0
	(¼X)°.=¼X	
	INNER PRODUCT ⌊.× ˜.× ˜.+ ×.± ×.* +.*	
287.	Maxima of elements of subsets of X specified by Y	X„A1; Y„B
	A+(X-A„˜/X)⌊.×Y	
288.	Indices of last non-blanks in rows	X„C
	(' '¬X)⌊.×¼¯1†½X	
289.	Maximum of X with weights Y	X„D1; Y„D1
	Y⌊.×X	
290.	Minimum of X with weights Y	X„D1; Y„D1
	Y˜.×X	
292.	Extending a distance table to next leg	X„D2
	X„X˜.+X	
293.	A way to combine trigonometric functions (sin X cos Y)	X„D0; Y„D0
	1 2×.±X,Y	
294.	Sine of a complex number	X„D; 2=1†½X
	(2 2½1 6 2 5)×.±X	
295.	Products over subsets of X specified by Y	X„A1; Y„B
	X×.*Y	
296.	Sum of squares of X	X„D1
	X+.*2	
297.	Randomizing random numbers (in ŒLX in a workspace)	
	ŒRL„ŒTS+.*2	
	INNER PRODUCT Ÿ.^ <.< <.ˆ <.‰ ˆ.‰>.>	
298.	Extending a transitive binary relation	X„B2
	X„XŸ.^X	
299.	Test if X is within range [Y[1;],Y[2;])	X„D0; Y„D2; 1†½Y „… 2
	X<.	
300.	Test if X is within range (Y[1;],Y[2;]]	X„D0; Y„D2; 1†½Y „… 2
	X<.ˆy	
301.	Test if X is within range (Y[1;],Y[2;]]	X„D; Y„D2; 1†½Y „… 2
	X<.ˆy	
302.	Test if the elements of X are ascending	X„D1
	X<.‰1²x	
303.	Test if X is an integer within range [G,H)	X„I0; G„I0; H„I0

	~Xˆ.‰(—X),G,H	
304.	Test if X is within range (Y[1;],Y[2;]]	X„D; Y„D2; 1†½Y „… 2
	(X,[.1+½½X]X)>.>Y	
	INNER PRODUCT Ÿ.¬ ^.= +.¬ +.=	
306.	Removing trailing blank columns	X„C2
	(²Ÿ\²' 'Ÿ.¬X)/X	
307.	Removing leading blank rows	X„C2
	(Ÿ\XŸ.¬' ')šX	
308.	Removing leading blank columns	X„C2
	(Ÿ\' 'Ÿ.¬X)/X	
309.	Index of first occurrences of rows of X as rows of Y	X„A, Y„A2
	ŒIO++š^™YŸ.¬³X	
310.	'X¼Y' for rows of matrices	X„A2; Y„A2
	ŒIO++š^™XŸ.¬³Y	
311.	Removing duplicate blank rows	X„C2
	(AŸ1‡1²1,A„XŸ.¬' ')šX	
312.	Removing duplicate blank columns	X„C2
	(AŸ1,¯1‡A„' 'Ÿ.¬X)/X	
313.	Removing blank columns	X„C2
	(' 'Ÿ.¬X)/X	
314.	Removing blank rows	X„C2
	(XŸ.¬' ')šX	
315.	Test if rows of X contain elements differing from Y	X„A; Y„A0
	XŸ.¬Y	
316.	Removing trailing blank rows	X„C2
	(-2†+/^\²X^.=' ')‡X	
317.	Removing duplicate rows	X„A2
	(Ÿš<\x^.=³x)šx	
318.	Removing duplicate rows	X„A2
	(1 1³<\x^.=³x)šx	
319.	Test if circular lists are equal (excluding phase)	X„A1; Y„A1
	Ÿ/Y^.=³(¼½X)²(2½½X)½X	
320.	Test if all elements of vector X are equal	X„B1
	X^.=Ÿ/X	
321.	Test if all elements of vector X are equal	X„B1
	X^.=^/X	
322.	Rows of matrix X starting with string Y	X„A2; Y„A1
	((((1†½X),½Y)†X)^.=Y)šX	
323.	Occurrences of string X in string Y	X„A1; Y„A1

	((-A)‡X^.=(A,1+⍳Y)⍳Y)/⍳(⍳Y)+1-A„⍳X	
324.	Test if vector Y is a row of array X	X„A; Y„A1
	1¹X^.=Y	
325.	Comparing vector Y with rows of array X	X„A; Y„A1
	X^.=Y	
326.	Word lengths of words in list X	X„C
	X+.¬' '	
327.	Number of occurrences of scalar X in array Y	X„A0; Y„A
	X+.=,Y	
328.	Counting pairwise matches (equal elements) in two vectors	X„A1; Y„A1
	X+.=Y	
	INNER PRODUCT -.÷ +.÷ +.×	
329.	Sum of alternating reciprocal series Y÷X	X„D1; Y„D1
	Y-.÷X	
330.	Limits X to fit in • field Y[1 2]	X„D; Y„I1
	(X—1‡A)˜1†A„(2 2⍳¯1 1 1 ¯.1)+.×10*(-1‡Y),-/Y+Y>99 0	
331.	Value of polynomial with coefficients Y at point X	X„D0; Y„D
	(X*¯1+⍳Y)+.×⍳Y	
332.	Arithmetic average (mean value) of X weighted by Y	X„D1; Y„D1
	(Y+.×X)÷⍳X	
333.	Scalar (dot) product of vectors	X„D1; Y„D1
	Y+.×X	
334.	Sum of squares of X	X„D1
	X+.×X	
335.	Summation over subsets of X specified by Y	X„A1; Y„B
	X+.×Y	
336.	Matrix product	X„D; Y„D; ¯1†⍳X „… 1†⍳Y
	X+.×Y	
337.	Sum of reciprocal series Y÷X	X„D1; Y„D1
	Y+.÷X	
	SCAN —\ ˜\ ×\ -	
338.	Groups of ones in Y pointed to by X (or trailing parts)	X„B; Y„B
	Y^A=—\X×A„+\Y>¯1‡0,Y	
339.	Test if X is in ascending order along direction Y	X„D; Y„I0
	^/[Y]X=—\[Y]X	
340.	Duplicating element of X belonging to Y,1†X until next found	X„A1; Y„B1
	X[1——\Y×⍳Y]	

341.	Test if X is in descending order along direction Y	X„D; Y„I0
	^/[Y]X=˜\[Y]X	
342.	Value of Taylor series with coefficients Y at point X	X„D0; Y„D1
	+/Y××\1,X÷¼¯1+½Y	
343.	Alternating series (1 ¯1 2 ¯2 3 ¯3 ...)	X„I0
	-\¼X	
	SCAN Š\ <\ ^\ ¬	
346.	Value of saddle point	X„D2
	(<\,(x=(½x)½—šx)^x=³(²½x)½˜/x)/,x	
348.	First one (turn off all ones after first one)	X„B
	<\x	
350.	Not first zero (turn on all zeroes after first zero)	X„B
	^\X	
351.	Running parity (¬\) over subvectors of Y indicated by X	X„B1; Y„B1
	¬\Y¬X\A¬¯1‡0,A„X/¬\¯1‡0,Y	
352.	Vector (X[1]½1),(X[2]½0),(X[3]½1),...	X„I1; ^/0
	¬\(¼+/X)¹+\ŒIO,X	
353.	Not leading zeroes(Ÿ\) in each subvector of Y indicated by X	X„B1; Y„B1
	¬\(YŸX)\A¬¯1‡0,A„(YŸX)/Y	
354.	Leading ones (^\) in each subvector of Y indicated by X	X„B1; Y„B1
	~¬\(Y^X)\A¬¯1‡0,A„~(Y^X)/Y	
355.	Locations of texts between and including quotes	X„C1
	AŸ¯1‡0,A„¬\X=''''	
356.	Locations of texts between quotes	X„C1
	A^¯1‡0,A„¬\X=''''	
357.	Joining pairs of ones	X„B
	XŸ¬\X	
358.	Places between pairs of ones	X„B
	(~X)^¬\X	
359.	Running parity	X„B
	¬\X	
	SCAN Ÿ\ ^	
360.	Removing leading and trailing blanks	X„C1
	((²Ÿ\²A)^Ÿ\A„' '¬X)/X	
361.	First group of ones	X„B
	X^^\X=Ÿ\X	
362.	Removing trailing blank columns	X„C2

	(²Ÿ\²Ÿš' '¬X)/X	
363.	Removing trailing blanks	X„C1
	(²Ÿ\²' '¬X)/X	
364.	Removing leading blanks	X„C1
	(Ÿ\' '¬X)/X	
365.	Not leading zeroes (turn on all zeroes after first one)	X„B
	Ÿ\X	
366.	Centering character array X with ragged edges	X„C
	(A-˜0.5×(A„+/^\²A)++/^\A„' '=²X)²X	
367.	Decommenting a matrix representation of a function (ŒCR)	X„C2
	(Ÿ/A)š(½X)½(,A)\(,A„^\('©'¬X)Ÿ¬\X='''')/,X	
369.	Centering character array X with only right edge ragged	X„C
	(-˜0.5×+/^\' '=²X)²X	
370.	Justifying right	X„C
	(-+/^\²' '=X)²X	
371.	Removing trailing blanks	X„C1
	(-+/^\²' '=X)‡X	
372.	Justifying left	X„C
	(+/^\' '=X)²X	
373.	Editing X with Y '-wise	X„C1; Y„C1
	((~(½A†X)†'/'=Y)/A†X),(1‡A‡Y),(A„+/^\Y¬',')‡X	
374.	Removing leading blanks	X„C1
	(+/^\' '=X)‡X	
375.	Indices of first blanks in rows of array X	X„C
	ŒIO++/^\' '¬X	
377.	Leading ones (turn off all ones after first zero)	X„B
	^\X	
	SCAN +	
378.	Vector (X[1]½1),(Y[1]½0),(X[2]½1),...	Q„I1; Y„I1
	(¼+/X,Y)¹+\1+¯1‡0,((¼+/X)¹+\X)\Y	
379.	Replicate Y[i] X[i] times (for all i)	X„I1; Y„A1
	((X¬0)/Y)[+\¯1²(¼+/X)¹+\X]	
380.	Vector (Y[1]+¼X[1]),(Y[2]+¼X[2]),(Y[3]+¼X[3]),...	X„I1; Y„I1; ½X„…½Y
	ŒIO++\1+((¼+/X)¹+\ŒIO,X)\Y-¯1‡1,X+Y	
381.	Replicate Y[i] X[i] times (for all i)	X„I1; Y„A1; ^/0
	Y[+\(¼+/X)¹¯1‡1++\0,X]	
382.	Replicate Y[i] X[i] times (for all i)	X„I1; Y„A1; ^/0
	Y[ŒIO++\(¼+/X)¹ŒIO++\X]	
383.	Cumulative sums (+\) over subvectors of Y	X„B1; Y„D1

383.	indicated by X	^„B1; Y„D1
	+\Y-X\A-¯1‡0,A„X/+\¯1‡0,Y	
384.	Sums over (+/) subvectors of Y, lengths in X	X„I1; Y„D1
	A-¯1‡0,A„(+\Y)[+\X]	
386.	X first figurate numbers	X„I0
	+\+\¼X	
387.	Insert vector for X[i] zeroes after i:th subvector	X„I1; Y„B1
	(¼(½Y)++/X)¹+\1+¯1‡0,(1²Y)\X	
388.	Open a gap of X[i] after Y[G[i]] (for all i)	X„I1; Y„A1; G„I1
	((¼(½Y)++/X)¹+\1+¯1‡0,((¼½Y)¹G)\X)\Y	
389.	Open a gap of X[i] before Y[G[i]] (for all i)	X„I1; Y„A1; G„I1
	((¼(½Y)++/X)¹+\1+((¼½Y)¹G)\X)\Y	
390.	Changing lengths X of subvectors to starting indicators	X„I1
	A ‘ A[+\¯1‡ŒIO,X]„1 ‘ A„(+/X)½0	
391.	Changing lengths X of subvectors to ending indicators	X„I1
	(¼+/X)¹(+\X)-~ŒIO	
392.	Changing lengths X of subvectors to starting indicators	X„I1
	(¼+/X)¹+\ŒIO,X	
393.	Insert vector for X[i] elements before i:th element	X„I1
	(¼+/A)¹+\A„1+X	
394.	Sums over (+/) subvectors of Y indicated by X	X„B1; Y„D1
	A-¯1‡0,A„(1²X)/+\Y	
395.	Fifo stock Y decremented with X units	Y„D1; X„D0
	G-¯1‡0,G„0—(+\Y)-X	
396.	Locations of texts between and including quotes	X„C1
	AŸ¯1‡0,A„2|+\X=''''	
397.	Locations of texts between quotes	X„C1
	A^¯1‡0,A„2|+\X=''''	
398.	X:th subvector of Y (subvectors separated by Y[1])	Y„A1; X„I0
	1‡(X=+\Y=1†Y)/Y	
399.	Locating field number Y starting with first element of X	Y„I0; X„C1
	(Y=+\X=1†X)/X	
400.	Sum elements of X marked by succeeding identicals in Y	X„D1; Y„D1
	A-¯1‡0,A„(Y¬1‡Y,0)/+\X	
401.	Groups of ones in Y pointed to by X	X„B1; Y„B1
	Y^A¹(X^Y)/A„+\Y>¯1‡0,Y	

402.	ith starting indicators X	X„B1; Y„B1
	(+\X)¹Y/¼½Y	
403.	G:th subvector of Y (subvectors indicated by X)	X„B1; Y„A1; G„I0
	(G=+\X)/Y	
404.	Running sum of Y consecutive elements of X	X„D1; Y„I0
	((Y-1)‡A)-0,(-Y)‡A„+\X	
405.	Depth of parentheses	X„C1
	+\('('=X)-¯1‡0,')'=X	
406.	Starting positions of subvectors having lengths X	X„I1
	+\¯1‡ŒIO,X	
407.	Changing lengths X of subvectors of Y to ending indicators	X„I1
	(¼½Y)¹(+\X)-~ŒIO	
408.	Changing lengths X of subvectors of Y to starting indicators	X„I1
	(¼½Y)¹+\ŒIO,X	
409.	X first triangular numbers	X„I0
	+\¼X	
410.	Cumulative sum	X„D
	+\X	
	REDUCTION ±/ ÷/ -/ ×/	
411.	Complementary angle (arccos sin X)	X„D0
	±/¯2 1,X	
412.	Evaluating a two-row determinant	X„D2
	-/×/0 1´X	
413.	Evaluating a two-row determinant	X„D2
	-/×š0 1²X	
414.	Area of triangle with side lengths in X (Heron's formula)	X„D1; 3 „… ½X
	(×/(+/X÷2)-0,X)*.5	
415.	Juxtapositioning planes of rank 3 array X	X„A3
	(×š2 2½1,½X)½2 1 3³X	
416.	Number of rows in array X (also of a vector)	X„A
	×/¯1‡½X	
417.	(Real) solution of quadratic equation with coefficients X	X„D1; 3 „… ½X
	(-X[2]-¯1 1×((X[2]*2)-×/4,X[1 3])*.5)÷2×X[1]	
418.	Reshaping planes of rank 3 array to rows of a matrix	X„A3
	(×/2 2½1,½X)½X	
419.	Reshaping planes of rank 3 array to a matrix	X„A3
	(×/2 2½(½X),1)½X	
420.	Number of elements (also of a scalar)	X„A

420.	Number of elements (also of a scalar)	X„A
	×/½X	
421.	Product of elements of X	X„D1
	×/X	
422.	Alternating product	X„D
	÷/X	
423.	Centering text line X into a field of width Y	X„C1; Y„I0
	Y†((˜-/.5×Y,½X)½' '),X	
424.	Alternating sum	X„D
	-/X	
	REDUCTION –/ ˜/	
425.	Test if all elements of vector X are equal	X„D1
	(–/X)=˜/X	
426.	Size of range of elements of X	X„D1
	(–/X)-˜/X	
427.	Conversion of set of positive integers X to a mask	X„I1
	(¼–/X)¹X	
428.	Negative infinity; the smallest representable value	
	–/¼0	
429.	Vectors as column matrices in catenation beneath each other	X„A1/2; Y„A1/2
	X,[1+.5×–/(½½X),½½Y]Y	
430.	Vectors as row matrices in catenation upon each other	X„A1/2; Y„A1/2
	X,[.5×–/(½½X),½½Y]Y	
431.	Quick membership (¹) for positive integers	X„I1; Y„I1
	A[X] ‘ A[Y]„1 ‘ A„(–/X,Y)½0	
432.	Positive maximum, at least zero (also for empty X)	X„D1
	–/X,0	
433.	Maximum of elements of X	X„D1
	–/X	
434.	Positive infinity; the largest representable value	
	˜/¼0	
435.	Minimum of elements of X	X„D1
	˜/X	
	REDUCTION Ÿ/ Š/ ¬/	
436.	Test if all elements of vector X are equal	X„B1
	Š/0 1¹X	
437.	Test if all elements of vector X are equal	X„B1
	(^/X)Ÿ~Ÿ/X	

438.	Test if all elements of vector X are equal	X„B1
	(^/X)=Ÿ/X	
439.	Test if all elements of vector X are equal	X„B1
	^/X÷Ÿ/X	
440.	Removing duplicate rows from ordered matrix X	X„A2
	(¯1²1‡(Ÿ/X¬¯1´X),1)šX	
441.	Vector having as many ones as X has rows	X„A2
	Ÿ/0/X	
442.	Test if X and Y have elements in common	X„A; Y„A1
	Ÿ/Y¹X	
443.	None, neither	X„B
	~Ÿ/X	
444.	Any, anyone	X„B
	Ÿ/X	
445.	Test if all elements of vector X are equal	X„B1
	¬/0 1¹X	
446.	Parity	X„B
	¬/X	
	REDUCTION ^/	
447.	Number of areas intersecting areas in X	X„D3 (n × 2 × dim)
	+/A^³A„^/X[;A½1;]^2 1 3³X[;(A„1†½X)½2;]	
448.	Test if all elements of vector X are equal	X„B1
	^/X/1²X	
449.	Comparison of successive rows	X„A2
	^/X=1´X	
450.	Test if all elements of vector X are equal	X„A1
	^/X=1²X	
451.	Test if X is a valid APL name	X„C1
	^/((1†X)¹10‡A),X¹A„'0..9A..Z‘a..x '	
452.	Test if all elements of vector X are equal	X„A1
	^/X=1†X	
453.	Identity of two sets	X„A1; Y„A1
	^/(X¹Y),Y¹X	
454.	Test if X is a permutation vector	X„I1
	^/(¼½X)¹X	
455.	Test if all elements of vector X are equal	X„B1
	~^/X¹~X	
456.	Test if X is boolean	X„A
	^/,X¹0 1	
457.	Test if Y is a subset of X (Y › X)	X„A; Y„A1

	^/Y⍳X	
458.	Test if arrays of equal shape are identical	X„A; Y„A; ½X „… ½Y
	^/,X=Y	
459.	Test if all elements of vector X are equal	X„A1
	^/X=X[1]	
460.	Blank rows	X„C2
	^/' '=X	
461.	All, both	X„B
	^/X	
	REDUCTION +/	
462.	Standard deviation of X	X„D1
	((+/(X-(+/X)÷⍴X)*2)÷⍴X)*.5	
463.	Y:th moment of X	X„D1
	(+/(X-(+/X)÷⍴X)*Y)÷⍴X	
464.	Variance (dispersion) of X	X„D1
	(+/(X-(+/X)÷⍴X)*2)÷⍴X	
465.	Arithmetic average (mean value), also for an empty array	X„D
	(+/,X)÷1⌈⍴,X	
466.	Test if all elements of vector X are equal	X„B1
	0=(⍴X)|+/X	
467.	Average (mean value) of columns of matrix X	X„D2
	(+⌿X)÷1↑(⍴X),1	
468.	Average (mean value) of rows of matrix X	X„D2
	(+/X)÷¯1↑1,⍴X	
469.	Number of occurrences of scalar X in array Y	X„A0; Y„A
	+/X=,Y	
470.	Average (mean value) of elements of X along direction Y	X„D; Y„I0
	(+/[Y]X)÷(⍴X)[Y]	
471.	Arithmetic average (mean value)	X„D1
	(+/X)÷⍴X	
472.	Resistance of parallel resistors	X„D1
	÷+/÷X	
473.	Sum of elements of X	X„D1
	+/X	
474.	Row sum of a matrix	X„D2
	+/X	
475.	Column sum of a matrix	X„D2
	+⌿X	
476.	Reshaping one-element vector X into a scalar	X„A1
	⊃X	

	+⁄X	
477.	Number of elements satisfying condition X	X„B1
	+/X	
	REVERSE ² ´	
478.	Scan from end with function ¸	X„A
	²¸\²X	
479.	The index of positive integers in Y	X„I; Y„I1
	A[X] ‘ A[²Y]„²¼½Y ‘ A„9999½ŒIO+½Y	
480.	'Transpose' of matrix X with column fields of width Y	X„A2; G„I0
	((²A)×1,Y)½2 1 3³(1²Y,A„(½X)÷1,Y)½X	
482.	Adding X to each column of Y	X„D1; Y„D; (½X)=1†½Y
	Y+³(²½Y)½X	
483.	Matrix with shape of Y and X as its columns	X„A1; Y„A2
	³(²½Y)½X	
484.	Derivate of polynomial X	X„D1
	¯1‡X×²¯1+¼½X	
485.	Reverse vector X on condition Y	X„A1; Y„B0
	,²[ŒIO+Y](1,½X)½X	
486.	Reshaping vector X into a one-column matrix	X„A1
	(²1,½X)½X	
487.	Avoiding parentheses with help of reversal	
	(²1, ...)	
	ROTATE ² ´	
488.	Vector (cross) product of vectors	X„D; Y„D
	((1²X)×¯1²Y)-(¯1²X)×1²Y	
489.	A magic square, side X	X„I0; 1=2|X
	A´(A„(¼X)-—X÷2)²(X,X)½¼X×X	
490.	Removing duplicates from an ordered vector	X„A1
	(¯1²1‡(X¬¯1²X),1)/X	
491.	An expression giving itself	
	1²22½11½'''1²22½11½'''	
492.	Transpose matrix X on condition Y	X„A2; Y„B0
	(Y²1 2)³X	
493.	Any element true (Ÿ/) on each subvector of Y indicated by X	X„B1; Y„B1
	(X/Y)‰A/1²A„(YŸX)/X	
494.	All elements true (^/) on each subvector of Y indicated by X	X„B1; Y„B1
	(X/Y)^A/1²A„(Yˆ X)/X	
495.	Removing leading, multiple and trailing Y's	X„A1; Y„A0
	(1†A)‡(A≤1²A„Y=X)/X	

496.	Changing starting indicators X of subvectors to lengths	X„B1
	A-¯1‡0,A„(1²X)/¼½X	
498.	(Cyclic) compression of successive blanks	X„C1
	(AŸ1²A„X¬' ')/X	
499.	Aligning columns of matrix X to diagonals	X„A2
	(1-¼¯1†½X)²X	
500.	Aligning diagonals of matrix X to columns	X„A2
	(¯1+¼¯1†½X)²X	
501.	Diagonal matrix with elements of X	X„D1
	0 ¯1‡(-¼½X)²((2½½X)½0),X	
502.	Test if elements differ from previous ones (non-empty X)	X„A1
	1,1‡X¬¯1²X	
503.	Test if elements differ from next ones (non-empty X)	X„A1
	(¯1‡X¬1²X),1	
504.	Replacing first element of X with Y	X„A1; Y„A0
	¯1²1‡X,Y	
505.	Replacing last element of X with Y	X„A1; Y„A0
	1²¯1‡Y,X	
506.	Ending points for X in indices pointed by Y	X„A1; Y„I1
	1²(¼½X)¹Y	
507.	Leftmost neighboring elements cyclically	X„A
	¯1²X	
508.	Rightmost neighboring elements cyclically	X„A
	1²X	
	TRANSPOSE ³	
509.	Applying to columns action defined on rows	X„A1; Y„I0
	³ ... ³X	
510.	Retrieving scattered elements Y from matrix X	X„A2; Y„I2
	1 1³X[Y[1;];Y[2;]]	
511.	Successive transposes of G (X after Y: X³Y³G)	X„I1; Y„I1
	X[Y]³G	
512.	Major diagonal of array X	X„A
	(1*½X)³X	
513.	Reshaping a 400×12 character matrix to fit into one page	X„C2
	40 120½2 1 3³10 40 12½X	
514.	Transpose of planes of a rank three array	X„A3
	1 3 2³X	
515.	Major diagonal of matrix X	X„A2

	1 1³X	
516.	Selecting specific elements from a 'large' outer product	X„A; Y„A; G„I1
	G³X°.¸Y	
517.	Test for antisymmetricity of square matrix X	X„D2
	~0¹X=-³X	
518.	Test for symmetricity of square matrix X	X„A2
	~0¹X=³X	
519.	Matrix with X columns Y	X„I0; Y„D1
	³(X,½Y)½Y	
	MAXIMUM — MINIMUM ˜	
520.	Limiting X between Y[1] and Y[2], inclusive	X„D; Y„D1
	Y[1]—Y[2]˜X	
521.	Inserting vector Y to the end of matrix X	X„A2; Y„A1
	(A†X),[¼1](1‡A„(½X)—0,½Y)†Y	
522.	Widening matrix X to be compatible with Y	X„A2; Y„A2
	((0 1×½Y)—½X)†X	
523.	Lengthening matrix X to be compatible with Y	X„A2; Y„A2
	((1 0×½Y)—½X)†X	
524.	Reshaping non-empty lower-rank array X into a matrix	X„A; 2‰½½X
	(1—¯2†½X)½X	
525.	Take of at most X elements from Y	X„I; Y„A
	(X˜½Y)†Y	
526.	Limiting indices and giving a default value G	X„A1; Y„I; G„A0
	(X,G)[(1+½X)˜Y]	
	CEILING — FLOOR ˜	
527.	Reshaping X into a matrix of width Y	X„D, Y„I0
	((—(½,X)÷Y),Y)½X	
528.	Rounding to nearest even integer	X„D
	˜X+1^2|X	
529.	Rounding, to nearest even integer for .5 = 1||X	X„D
	˜X+.5×.5¬2|X	
530.	Rounding, to nearest even integer for .5 = 1||X	X„D
	˜X+.5×.5¬2|X	
531.	Arithmetic progression from X to Y with step G	X„D0; Y„D0; G„D0
	X+(G××Y-X)×(¼1+|˜(Y-X)÷G)-ŒIO	
532.	Centering text line X into a field of width Y	X„C1; Y„I0
	(-˜.5×Y+½X)†X	
533.	Test if integer	X„D
	X=˜X	

534.	Rounding currencies to nearest 5 subunits	X„D
	.05×˜.5+X÷.05	
535.	First part of numeric code ABBB	X„I
	˜X÷1000	
536.	Rounding to X decimals	X„I; Y„D
	(10*-X)×˜0.5+Y×10*X	
537.	Rounding to nearest hundredth	X„D
	0.01×˜0.5+100×X	
538.	Rounding to nearest integer	X„D
	˜0.5+X	
539.	Demote floating point representations to integers	X„I
	˜X	
	RESIDUE |	
540.	Test if X is a leap year	X„I
	(0=400|X)Ÿ(0¬100|X)^0=4|X	
541.	Framing	X„C2
	'_',[1]('|',X,'|'),[1]'¯'	
542.	Magnitude of fractional part	X„D
	1||X	
543.	Fractional part with sign	X„D
	(×X)|X	
544.	Increasing the dimension of X to multiple of Y	X„A1; Y„I0
	X,(Y|-½X)†0/X	
545.	Removing every Y:th element of X	X„A1; Y„I0
	(0¬Y|¼½X)/X	
546.	Taking every Y:th element of X	X„A1; Y„I0
	(0=Y|¼½X)/X	
547.	Divisors of X	X„I0
	(0=A|X)/A„¼X	
548.	Removing every second element of X	X„A1
	(2|¼½X)/X	
549.	Elements of X divisible by Y	X„D1; Y„D0/1
	(0=Y|X)/X	
550.	Ravel of a matrix to Y[1] columns with a gap of Y[2]	X„A2; Y„I1
	(A×Y[1]*¯1 1)½(A„(½X)+(Y[1]|-1†½X),Y[2])†X	
551.	Test if even	X„I
	~2|X	
552.	Last part of numeric code ABBB	X„I
	1000|X	
553.	Fractional part	X„D

	1|X	
	MAGNITUDE |, SIGNUM ×	
554.	Increasing absolute value without change of sign	X„D; Y„D
	(×X)×Y+|X	
555.	Rounding to zero values of X close to zero	X„D; Y„D
	X×Yˆ|X	
556.	Square of elements of X without change of sign	X„D
	X×|X	
557.	Choosing according to signum	X„D; Y„A1
	Y[2+×X]	
	EXPAND \ ™	
558.	Not first zero (ˆ\) in each subvector of Y indicated by X	X„B1; Y„B1
	~(B^X)Ÿ(BŸX)\A>¯1‡0,A„(BŸX)/B„~Y	
559.	First one (<\) in each subvector of Y indicated by X	X„B1; Y„B1
	(Y^X)Ÿ(YŸX)\A>¯1‡0,A„(YŸX)/Y	
560.	Replacing elements of X in set Y with blanks/zeroes	X„A0; Y„A1
	A\(A„~X¹Y)/X	
561.	Replacing elements of X not in set Y with blanks/zeroes	X„A1; Y„A
	A\(A„X¹Y)/X	
562.	Merging X and Y under control of G (mesh)	X„A1; Y„A1; G„B1
	A ‘ A[(~G)/¼½G]„Y ‘ A„G\X	
563.	Replacing elements of X not satisfying Y with blanks/zeroes	X„A; Y„B1
	Y\Y/X	
564.	Adding an empty row into X after rows Y	X„A2; Y„I1
	(~(¼(½Y)+1½½X)¹Y+¼½Y)™X	
565.	Test if numeric	X„A1
	0¹0\0½X	
566.	Adding an empty row into X after row Y	X„A2; Y„I0
	((Y+1)¬¼1+1½½X)™X	
567.	Underlining words	X„C1
	X,[ŒIO-.1](' '¬X)\'¯'	
568.	Using boolean matrix Y in expanding X	X„A1; Y„B2
	(½Y)½(,Y)\X	
569.	Spacing out text	X„C1
	((2×½X)½1 0)\X	
	COMPRESS / š	
570.	Lengths of groups of ones in X	X„B1
	(A>0)/A„(1‡A)-1+¯1‡A„(~A)/¼½A„0,X,0	

571.	Syllabization of a Finnish word X	X„A1
	(~A¹1,½X)/A„A/¼½A„(1‡A,0)	
572.	Choosing a string according to boolean value G	X„C1; Y„C1; G„B0
	(G/X),(~G)/Y	
573.	Removing leading, multiple and trailing blanks	X„C1
	(' '=1†X)‡((1‡A,0)ŸA„' '¬X)/X	
575.	Removing columns Y from array X	X„A; Y„I1
	(~(¼¯1†½X)¹Y)/X	
576.	Removing trailing blanks	X„C1
	(¯1†(' '¬X)/¼½X)½X	
577.	Lengths of subvectors of X having equal elements	X„A1
	(1‡A)-¯1‡A„(A,1)/¼1+½A„1,(1‡X)¬¯1‡X	
578.	Field lengths of vector X; G „… ending indices	X„A1; G„I1
	G-¯1‡0,G„(~ŒIO)+(((1‡X)¬¯1‡X),1)/¼½X	
580.	Removing multiple and trailing blanks	X„C1
	((1‡A,0)ŸA„' '¬X)/X	
581.	Removing leading and multiple blanks	X„C1
	(AŸ¯1‡0,A„' '¬X)/X	
582.	Removing multiple blanks	X„C1
	(AŸ¯1‡1,A„' '¬X)/X	
583.	Removing duplicate Y's from vector X	X„A1; Y„A0
	(AŸ¯1‡1,A„X¬Y)/X	
584.	Indices of all occurrences of elements of Y in X	X„A1; Y„A
	(X¹Y)/¼½X	
585.	Union of sets,	X„A1; Y„A1
	Y,(~X¹Y)/X	
586.	Elements of X not in Y (difference of sets)	X„A1; Y„A
	(~X¹Y)/X	
587.	Rows of non-empty matrix X starting with a character in Y	X„A2; Y„A1
	(X[;1]¹Y)šX	
588.	Intersection of sets,	X„A1; Y„A
	(X¹Y)/X	
589.	Reduction with function ¸ in dimension Y, rank unchanged	Y„I0; X„A
	((½X)*Y¬¼½½X)½ ¸/[Y]X	
590.	Replacing all values X in G with Y	X„A0; Y„A0; G„A
	(½G)½A ‘ A[(A=X)/¼½A„,G]„Y	
591.	Indices of all occurrences of Y in X	X„A1; Y„A0
	(Y=X)/¼½X	
592.	Replacing elements of G satisfying X with Y	Y„A0; X„B1; G„A1

	G[X/¼½G]„Y	
593.	Removing duplicates from positive integers	X„I1
	A/¼9999 ‘ A[X]„1 ‘ A„9999½0	
594.	Indices of ones in logical vector X	X„B1
	X/¼½X	
595.	Conditional in text	X„B0
	((~X)/'IN'),'CORRECT'	
596.	Removing blanks	X„A1
	(' '¬X)/X	
597.	Removing elements Y from vector X	X„A1; Y„A0
	(X¬Y)/X	
598.	Vector to expand a new element after each one in X	X„B1
	(,X,[1.5]1)/,X,[1.5]~X	
599.	Reduction with FUNCTION ¸ without respect to shape	X„D
	¸/,X	
600.	Reshaping scalar X into a one-element vector	X„A
	1/X	
601.	Empty matrix	X„A2
	0šX	
602.	Selecting elements of X satisfying condition Y	X„A; Y„B1
	Y/X	
	TAKE †	
603.	Inserting vector X into matrix Y after row G	X„A1; Y„A2; G„I0
	Y[¼G;],[1]((1‡½Y)†X),[1](2†G)‡Y	
604.	Filling X with last element of X to length Y	X„A1; Y„I0
	Y†X,Y½¯1†X	
605.	Input of row Y of text matrix X	X„C2; Y„I0
	X[Y;]„(1†½X)†	
606.	First ones in groups of ones	X„B
	X>((-½½X)†¯1)‡0,X	
607.	Inserting X into Y after index G	X„A1; Y„A1; G„I0
	(G†Y),X,G‡Y	
608.	Pairwise differences of successive columns (inverse of +\)	X„D
	X-((-½½X)†¯1)‡0,X	
609.	Leftmost neighboring elements	X„D
	((-½½X)†¯1)‡0,X	
610.	Rightmost neighboring elements	X„D
	((-½½X)†1)‡X,0	
611.	Shifting vector X right with Y without rotate	X„A1; Y„I0

	(-⍳X)⍴(-Y)⌽X	
612.	Shifting vector X left with Y without rotate	X„A1; Y„I0
	(⍳X)⍴Y⌽X	
613.	Drop of Y first rows from matrix X	X„A2; Y„I0
	(2⍴Y)⌽X	
614.	Test if numeric	X„A
	0¹1⍴0⍳X	
615.	Reshaping non-empty lower-rank array X into a matrix	X„A; 2⌶⍳⍳X
	(¯2⍴1 1,⍳X)⍳X	
616.	Giving a character default value for input	X„C0
	1⍴ ,X	
617.	Adding scalar Y to last element of X	X„D; Y„D0
	X+(-⍳X)⍴Y	
618.	Number of rows in matrix X	X„A2
	1⍴⍳X	
619.	Number of columns in matrix X	X„A2
	¯1⍴⍳X	
620.	Ending points for X fields of width Y	X„I0; Y„I0
	(X×Y)⍳(-Y)⍴1	
621.	Starting points for X fields of width Y	X„I0; Y„I0
	(X×Y)⍳Y⍴1	
622.	Zero or space depending on the type of X (fill element)	X„A
	1⍴0⍳X	
623.	Forming first row of a matrix to be expanded	X„A1
	1 80⍳80⍴X	
624.	Vector of length Y with X ones on the left, the rest zeroes	X„I0; Y„I0
	Y⍴X⍳1	
625.	Justifying text X to right edge of field of width Y	Y„I0; X„C1
	(-Y)⌽X	
	DROP ‡	
627.	Starting points of groups of equal elements (non-empty X)	X„A1
	1,(1‡X)≠¯1‡X	
628.	Ending points of groups of equal elements (non-empty X)	X„A1
	((1‡X)≠¯1‡X),1	
629.	Pairwise ratios of successive elements of vector X	X„D1
	(1‡X)÷¯1‡X	

630.	Pairwise differences of successive elements of vector X	X„D1
	(1‡X)-¯1‡X	
631.	Differences of successive elements of X along direction Y	X„D; Y„I0
	X-(-Y=¼½X)‡0,[Y]X	
632.	Ascending series of integers Y..X (for small Y and X)	X„I0; Y„I0
	(Y-1)‡¼X	
633.	First ones in groups of ones	X„B1
	X>¯1‡0,X	
634.	Last ones in groups of ones	X„B1
	X>1‡X,0	
635.	List of names in X (one per row)	X„C2
	1‡,',',X	
636.	Selection of X or Y depending on condition G	X„A0; Y„A0; G„B0
	''½G‡X,Y	
637.	Restoring argument of cumulative sum (inverse of +\)	X„D1
	X-¯1‡0,X	
638.	Drop of Y first rows from matrix X	X„A2; Y„I0
	(Y,0)‡X	
639.	Drop of Y first columns from matrix X	X„A2; Y„I0
	(0,Y)‡X	
640.	Number of rows in matrix X	X„A2
	¯1‡½X	
641.	Number of columns in matrix X	X„A2
	1‡½X	
642.	Conditional drop of Y elements from array X	X„A; Y„I1; G„B1
	(Y×G)‡X	
643.	Conditional drop of last element of X	X„A1; Y„B0
	(-Y)‡X	
	MEMBER OF ¹	
644.	Expansion vector with zero after indices Y	X„A1; Y„I1
	~(¼(½Y)+½X)¹Y+¼½Y	
645.	Boolean vector of length Y with zeroes in locations X	X„I; Y„I0
	(~(¼Y)¹X)	
646.	Starting points for X in indices pointed by Y	X„A1; Y„I1
	(¼½X)¹Y	
647.	Boolean vector of length Y with ones in locations X	X„I; Y„I0
	(¼Y)¹X	

648.	Check for input in range 1..X	X„A
	(Y„Œ)¹¼X	
649.	Test if arrays are identical	X„A; Y„A
	~0¹X=Y	
650.	Zeroing elements of Y depending on their values	Y„D; X„D
	Y×~Y¹X	
651.	Test if single or scalar	X„A
	1¹½,X	
652.	Test if vector	X„A
	1¹½½X	
653.	Test if X is an empty array	X„A
	0¹½X	
	INDEX GENERATOR ¼	
654.	Inverting a permutation	X„I1
	A ‘ A[X]„A ‘ A„¼½X	
655.	All axes of array X	X„A
	¼½½X	
656.	All indices of vector X	X„A1
	¼½X	
657.	Arithmetic progression of Y numbers from X with step G	X„D0; Y„D0; G„D0
	X+G×(¼Y)-ŒIO	
658.	Consecutive integers from X to Y (arithmetic progression)	X„I0; Y„I0
	(X-ŒIO)+¼1+Y-X	
659.	Empty numeric vector	
	¼0	
660.	Index origin (ŒIO) as a vector	
	¼1	
	LOGICAL FUNCTIONS ~ Ÿ ^ ‹ Š	
661.	Demote non-boolean representations to booleans	X„B
	0ŸX	
662.	Test if X is within range (Y[1],Y[2])	X„D; Y„D1
	(Y[1]	
663.	Test if X is within range [Y[1],Y[2]]	X„D; Y„D1; 2=½Y
	(Y[1]ˆX)^(XˆY[2])	
664.	Zeroing all boolean values	X„B
	0^X	
666.	Selection of elements of X and Y depending on condition G	X„D; Y„D; G„B
	(X×G)+Y×~G	
	Changing an index origin dependent result to be	

667.	Changing an index origin dependent result to be as ⎕IO=1	X„1
	(~⎕IO)+X	
668.	Conditional change of elements of Y to one according to X	Y„D; X„B
	Y*~X	
	COMPARISON <ˆ> ¬	
669.	X implies Y	X„B; Y„B
	XˆY	
670.	X but not Y	X„B; Y„B
	X>Y	
671.	Avoiding division by zero error (gets value zero)	X„D; Y„D
	(0¬X)×Y÷X+0=X	
672.	Exclusive or	X„B; Y„B
	X¬Y	
673.	Replacing zeroes with corresponding elements of Y	X„D; Y„D
	X+Y×X=0	
674.	Kronecker delta of X and Y (element of identity matrix)	X„I; Y„I
	Y=X	
	RAVEL ,	
675.	Catenating Y elements G after every element of X	X„A1; Y„I0; G„A
	,X,((½X),Y)½G	
676.	Catenating Y elements G before every element of X	X„A1; Y„I0; G„A0
	,(((½X),Y)½G),X	
677.	Merging vectors X and Y alternately	X„A1; Y„A1
	,Y,[⎕IO+.5]X	
678.	Inserting Y after each element of X	X„A1; Y„A0
	,X,[1.1]Y	
679.	Spacing out text	X„C1
	,X,[1.1]' '	
680.	Reshaping X into a matrix of width Y	X„D, Y„I0
	(((½,X),1)×Y*¯1 1)½X	
681.	Temporary ravel of X for indexing with G	X„A; Y„A; G„I
	X„A½X ‘ X[G]„Y ‘ X„,X ‘ A„½X	
682.	Temporary ravel of X for indexing with G	X„A; Y„A; G„I
	X„(½X)½A ‘ A[G]„Y ‘ A„,X	
683.	First column as a matrix	X„A2
	X[;,1]	
684.	Number of elements (also of a scalar)	X„A
	½,X	
	CATENATE ,	
685.	Separating variable length lines	X„A1; Y„A1

	X,⍕TC[2],Y	
686.	X×X identity matrix	X„I0
	(X,X)⍴1,X⍴0	
687.	Array and its negative ('plus minus')	X„D
	X,[.5+⍳⍴X]-X	
688.	Underlining a string	X„C1
	X,[⍕IO-.1]'¯'	
689.	Forming a two-column matrix	X„A1; Y„A1
	X,[1.1]Y	
690.	Forming a two-row matrix	X„A1; Y„A1
	X,[.1]Y	
691.	Selection of X or Y depending on condition G	X„A0; Y„A0; G„B0
	(X,Y)[⍕IO+G]	
692.	Increasing rank of Y to rank of X	X„A; Y„A
	((((⍳⍴X)-⍳⍴Y)⍴1),⍴Y)⍴Y	
693.	Identity matrix of shape of matrix X	X„D2
	(⍴X)⍴1,0×X	
694.	Reshaping vector X into a two-column matrix	X„A1
	((0.5×⍴X),2)⍴X	
696.	Reshaping vector X into a one-row matrix	X„A1
	(1,⍴X)⍴X	
697.	Reshaping vector X into a one-column matrix	X„A1
	((⍴X),1)⍴X	
698.	Forming a Y-row matrix with all rows alike (X)	X„A1; Y„I0
	(Y,⍴X)⍴X	
699.	Handling array X temporarily as a vector	X„A
	(⍴X)⍴ ... ,X	
700.	Joining sentences	X„A; Y„A1
	Y,0⍴X	
701.	Entering from terminal data exceeding input (printing) width	X„D
	X„0 2 1 2 5 8 0 4 5,⍷	
	INDEXING [ ]	
702.	Value of fixed-degree polynomial Y at points X	Y„D1; X„D
	Y[3]+X×Y[2]+X×Y[1]	
703.	Number of columns in array X	X„A
	(⍴X)[⍴⍴X]	
704.	Number of rows in matrix X	X„A2
	(⍴X)[1]	
705.	Number of columns in matrix X	X„A2
	(⍴X)[2]	

	(½X)[⍋X]	
706.	Conditional elementwise change of sign	Y„D; X„B
	Y×1 ¯1[1+X]	
707.	Selection depending on index origin	X„A1
	X[2×⎕IO]	
708.	Indexing with boolean value X (plotting a curve)	X„B
	' *'[⎕IO+X]	
709.	Indexing independent of index origin	X„A1; Y„I
	X[⎕IO+Y]	
710.	Selection depending on index origin	X„A1
	X[1]	
711.	Zeroing a vector (without change of size)	X„D1
	X[]„0	
712.	First column as a vector	X„A2
	X[;1]	
	SHAPE ½	
713.	Rank of array X	X„A
	½½X	
715.	Duplicating vector X Y times	X„A1; Y„I0
	(Y×½X)½X	
716.	Adding X to each row of Y	X„D1; Y„D; (½X)=¯1†½Y
	Y+(½Y)½X	
717.	Array with shape of Y and X as its rows	X„A1; Y„A
	(½Y)½X	
718.	Number of rows in matrix X	X„A2
	1½½X	
	RESHAPE ½	
720.	Forming an initially empty array to be expanded	
	0 80½0	
721.	Output of an empty line	X„A
	0½X„	
722.	Reshaping first element of X into a scalar	X„A
	''½X	
723.	Corner element of a (non-empty) array	X„A
	1½X	
	ARITHMETIC + - × ÷	
724.	Continued fraction	
	1+÷2+÷3+÷4+÷5+÷6+÷ ...	
725.	Force 0÷0 into DOMAIN ERROR in division	X„D; Y„D
	Y×÷X	
726.	Conditional elementwise change of sign	X„D; Y„B; ½X „… ½Y

	X×¯1*Y	
727.	Zero array of shape and size of X	X„D
	0×X	
728.	Selecting elements satisfying condition Y, zeroing others	X„D; Y„B
	Y×X	
729.	Number and its negative ('plus minus')	X„D0
	1 ¯1×X	
730.	Changing an index origin dependent result to be as ŒIO=0	X„I
	-ŒIO-X	
731.	Changing an index origin dependent argument to act as ŒIO=1	X„I
	(ŒIO-1)+X	
732.	Output of assigned numeric value	X„D
	+X„	
733.	Changing an index origin dependent argument to act as ŒIO=0	X„I
	ŒIO+X	
734.	Selecting elements satisfying condition Y, others to one	X„D; Y„B
	X*Y	
	MISCELLANEOUS	
736.	Setting a constant with hyphens	
	ŒLX„	
737.	Output of assigned value	X„A
	Œ„X„	
738.	Syntax error to stop execution	
	*	
888.	Meaning of life	
	–´•œ›|˜-*+±—×÷!²³ ~½“”,µ?¼0	

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