http://www.pyr.fi/apl/texts/Idiot.htm

Idiom Library

GRADE UP

1. Progressive index of (without replacement) X+1; Y+1
   (pX)↓p↓X,Y; Y↓(pY)↓p↓X,Y
2. Ascending cardinal numbers (ranking, shareable) X+D1
   l.5x(↓X)+ΦΦΦΦΦΦX
3. Cumulative maxima (\") of subvectors of Y indicated by X X+1; Y+1
   Y[A; A+↓A[\"(+X)][A+\"Y]]
4. Cumulative minima (\") of subvectors of Y indicated by X X+1; Y+1
   Y[A; A+↓A[X][A+\"Y]]
5. Progressive index of (without replacement) X+1; Y+1
   (↓X)↓Y[↓X; Y]\(↓X; Y)↓ρY
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; (pX) ↔ +/Y
   A[\$(+/ρY)\^+\(↓O; X)][A+\$Y]]
9. Index of the elements of X in Y X+D1; Y+D1
   (((1,A)/B)↓I+ρY)[(pY)↓\(+X,A+\{1&A-\{1+1=A;B])\^B+A+Y,X]
10. Minima (\") of elements of subvectors of Y indicated by X X+1; Y+1
    Y[A\"X[\"(+X)][A+\"Y]]
11. Grade up (\$) for sorting subvectors of Y indicated by X X+1; Y+1
    A[A\"+[X][A+\$Y]]
12. Occurrences of the elements of X X+D1
    1-f(2; pX)ρ↓↓X,X
13. Sorting rows of matrix X into ascending order X+D2
    (pX)ρ\^; (pX)\^\(↓O; X; Y\^X]
14. Adding a new dimension after dimension G Y-fold G+I0; Y+I0; X=A
    (\$G; ρ\^1; ρ\^X)↓(Y,ρX)ρX
15. Sorting rows of matrix X into ascending order X+D2
    (pX)ρ\^; (pX)\^\(↓O; A\^A+↓1ρX] A-A\[(\$X)-\O]
16. Y smallest elements of X in order of occurrence X+D1, Y+I0
    ((↓X)↓Y; E(\$Y)/X
17. Merging X, Y, Z ... under control of G (mesh) X+1A; Y+1A; Z+1A; ... ; G+1I
    (Y;X;Z, ...)[\$G]
18. Merging X and Y under control of G (mesh) X+1A; Y+1A; G+1B
    (X;Y)[\$G]
19. Ascending cardinal numbers (ranking, all different) X+D1
    ﾆ\^\^X
20. Grade down (\$) for sorting subvectors of Y having lengths X X+D1; Y+I1; (pX) ↔ +/Y
    A[\$(+\(ρY)\^+\(↓O; X)][A+\$Y]]
21. Maxima (\") of elements of subvectors of Y indicated by X X+1; Y+1
    Y[A\"X[\"(+X)][A+\$Y]]
22. Grade down (\$) for sorting subvectors of Y indicated by X X+1; Y+1
    A[A\"+[X][A+\$Y]]
23. Y largest elements of X in order of occurrence X+D1; Y+I0
    ((↓Y)↓Y; E(\$Y)/X
24. Merging X and Y under control of G (mesh) X+1A; Y+1A; G+1B
    (Y;X)[\$G]
25. Descending cardinal numbers (ranking, all different) X+D1
    ﾆ\^\^X
26. Sorting rows of X according to key Y (alphabetizing) X+2A; Y+1
    X[A\((1;ρY)↓1;X; Y]\]
27. Diagonal ravel X+1
    (X)[\$+(pX)\(\(ρX; X)-\O]
28. Grade up according to key Y X+1A; X+1
    A\^Y\^X
29. Test if X is a permutation vector X+I1
    X[\^(X)]\^.=\^pX
30. Sorting a matrix into lexicographic order X+D2
    X[A\+A-.\(A-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<.\(pY
    A ∆ A[(B/C)-ρY]B+/B+\(\(B+\(ρY)
33. Rotate first elements ($\phi$) of subvectors of $Y$ indicated by $X$: $X \cdot B1; Y \cdot A1$

34. Doubling quotes (for execution) $X \cdot C1$

35. Inserting $Y$'s into vector $X$ after indices $G$: $X \cdot C1; Y \cdot D1$

36. Median $X \cdot D1$

37. Index of last maximum element of $X$: $X \cdot D1$

38. Index of first minimum element of $X$: $X \cdot D1$

39. Expansion vector with zero after indices $Y$: $X \cdot D1; Y \cdot I1$

40. Catenating $G$ elements $H$ before indices $Y$: $X \cdot A1; Y \cdot I1; H \cdot A0$

41. Catenating $G$ elements $H$ after indices $Y$: $X \cdot A1; Y \cdot I1; H \cdot A0$

42. Median $X$: $X \cdot D1$

43. Index of first maximum element of $X$: $X \cdot D1$

44. Index of last maximum element of $X$: $X \cdot D1$

45. Expansion vector with zero after indices $Y$: $X \cdot D1; Y \cdot I1$

46. Catenating $G$ elements $H$ before indices $Y$: $X \cdot A1; Y \cdot I1; H \cdot A0$

47. Catenating $G$ elements $H$ after indices $Y$: $X \cdot A1; Y \cdot I1; H \cdot A0$

48. Merging $X$ and $Y$ under control of $G$: $X \cdot A1; Y \cdot A1; G \cdot B1$

49. Sorting a matrix according to $Y$:th column $X \cdot D2$

50. Sorting indices $X$ according to data $Y$: $X \cdot D1$

51. Choosing sorting direction during execution $X \cdot D1; Y \cdot D0$

52. Sorting $Y$ according to $X$: $Y \cdot A1$

53. Sorting $Y$ into ascending order $X \cdot D1$

54. Inverting a permutation $X \cdot I1$

55. Indices of ones in logical vector $X$: $X \cdot B1$

56. Index of first maximum element of $X$: $X \cdot D1$

57. Moving all blanks to end of text $X \cdot C1$

58. Sorting $X$ into ascending order $X \cdot D1$

59. Sorting $X$ into descending order $X \cdot D1$

60. Inverting a permutation $X \cdot I1$

GRADE DOWN Π

49. Reverse vector $X$ on condition $Y$: $X \cdot B1; Y \cdot B0$

50. Sorting a matrix into reverse lexicographic order $X \cdot D2$

51. Reversal ($\phi$) of subvectors of $X$ having lengths $Y$: $X \cdot D1; Y \cdot I1$

52. Reversal ($\phi$) of subvectors of $Y$ indicated by $X$: $X \cdot D1; Y \cdot A1$

53. Indices of ones in logical vector $X$: $X \cdot B1$

54. Index of first maximum element of $X$: $X \cdot D1$

55. Moving all blanks to end of text $X \cdot C1$

56. Sorting $X$ into descending order $X \cdot D1$

57. Sorting $X$ into descending order $X \cdot D1$

58. Moving elements satisfying condition $Y$ to the start of $X$: $X \cdot A1; Y \cdot B1$

MATRIX INVERSION / MATRIX DIVISION ☹

60. Interpolated value of series $(X, Y)$ at $G$: $X \cdot D1; Y \cdot D1; G \cdot D0$

61. Predicted values of exponential (curve) fit $X \cdot D1; Y \cdot D1$

62. Coefficients of exponential (curve) fit of points $(X, Y)$: $X \cdot D1; Y \cdot D1$

63. Predicted values of best linear fit (least squares): $X \cdot D1; Y \cdot D1$

64. G-degree polynomial (curve) fit of points $(X, Y)$: $X \cdot D1; Y \cdot D1$

65. Best linear fit of points $(X, Y)$ (least squares): $X \cdot D1; Y \cdot D1$

DECODE ↓
66. Binary format of decimal number $X \times 10^{-0.5}((1+2^{\#f},X)\rho 2)\times X$

67. Bar chart of two integer series (across the page) $X \times I_2$; $1pX \to X$

68. Case structure with an encoded branch destination $Y \times I_1$; $X \times B_1$

69. Representation of current time (24 hour clock)
   $A \triangleq A[3,6] \to 'X \quad A \times \#1000133+DTS$

70. Representation of current date (descending format)
   $A \triangleq A[5,8] \to 'X \quad A \times \#1000133+DTS$

71. Representation of current time (12 hour clock)
   $(1\phi, 'X \to 'X \quad 3 2, p e 0 \times 10012 0 \times 0133+DTS), 'AP'[1+12 \times DTS[4]], 'M'$

73. Removing duplicate rows $X \times A_2$
   $((\lambda A) = \lambda A \times 2 \times X, = \#X) \times X$

74. Conversion from hexadecimal to decimal $X \times C_1$

75. Conversion of alphanumeric string into numeric $X \times C_1$

76. Value of polynomial with coefficients $Y$ at points $X \times D_1$; $Y \times D_1$
   $(X^0+, 0) \times Y$

77. Changing connectivity list $X$ to a connectivity matrix $X \times C_2$

78. Present value of cash flows $X$ at interest rate $Y$ % $X \times D_1$; $Y \times D_0$
   $(+1Y+100) \times Y$

79. Justifying right $X \times C$
   $(1-('X \times I)1iX) \times X$

80. Number of days in month $X$ of years $Y$ (for all leap years) $X \times I_0$; $Y \times I$
   $(12p7p31 30)[X]-0 \times 1+2(X=2),[.1](0#400[Y])-(0#100[Y])-0#4[Y]$

81. Number of days in month $X$ of years $Y$ (for most leap years) $X \times I_0$; $Y \times I$
   $(12p7p31 30)[X]-0 \times 1+2(X=2),[.1]0#4[Y]$

82. Encoding current date
   $1001000133+DTS$

83. Removing trailing blanks $X \times C_1$
   $(1-('X \times I)1iX)$

84. Index of first non-blank, counted from the rear $X \times C_1$
   $(('X \times I)1iX)$

85. Indexing scattered elements $X \times A$; $Y \times I_2$
   $(,X)[DIO+(\rho X)\times Y-DIO]$  

86. Conversion of indices $Y$ of array $X$ to indices of raveled $X \times A$; $Y \times I_2$
   $DIO+(\rho X)\times Y-DIO$

87. Number of columns in array $X$ as a scalar $X \times A$
   $0\times \rho X$

88. Future value of cash flows $X$ at interest rate $Y$ % $X \times D_1$; $Y \times D_0$
   $(1+Y+100) \times X$

89. Sum of the elements of vector $X \times D_1$
   $1\times X$

90. Last element of numeric vector $X$ as a scalar $X \times D_1$
   $0\times X$

91. Last row of matrix $X$ as a vector $X \times A$
   $0\times X$

92. Integer representation of logical vectors $X \times B$
   $2\times X$

93. Value of polynomial with coefficients $Y$ at point $X \times D_0$; $Y \times D$
   $X \times Y$

ENCODE

94. Conversion from decimal to hexadecimal (X=1..255)X\times I
   '0123456789ABCDEF'[DIO+((\#16\times X)\rho 16)\times X]

95. All binary representations up to $X$ (truth table) $X \times I_0$
   $((2\#f+1\times X)\rho 2) \times 0,1 \times X$

96. Representation of $X$ in base $Y \times D_0$; $Y \times D_0$
   $((1+Y\times Y)\rho Y) \times X$

97. Digits of $X$ separately $X \times I_0$
   $((1+I\#\times X)\rho 10) \times X$

98. Helps locating column positions 1..$X \times I_0$
   1 0\times 10 10\times DIO-X$

99. Conversion of characters to hexadecimal representation (DAV) $X \times C_1$
   , ', '0123456789ABCDEF'[DIO+16 16\times DIO-DAV\times X]
100. Polynomial with roots $X \propto D$

$\Phi((0,1)X^*)^*(1+1^2X)$

101. Index pairs of saddle points $X \propto D$

102. Changing connectivity matrix $X$ to a connectivity list $X \propto C$

103. Matrix of all indices of $X \propto A$

104. Separating a date YYMMDD to YY, MM, DD $X \propto D$

105. Indices of elements $Y$ in array $X \propto A$; $Y \propto A$

106. All pairs of elements of $X$ and $Y$ $X \propto I$

107. Matrix for choosing all subsets of $X$ (truth table) $X \propto A$

108. All binary representations with $X$ bits (truth table) $X \propto I$

109. Incrementing cyclic counter $X$ with upper limit $Y$ $X \propto I$

110. Decoding numeric code ABBCCC into a matrix $X \propto I$

111. Integer and fractional parts of positive numbers $X \propto D$

112. Number of decimals of elements of $X \propto D$

113. Number of sortable columns at a time using $\perp$ and alphabet $X \propto C$

114. Playing order in a cup for $X$ ranked players $X \propto I$

115. Arithmetic precision of the system (in decimals) $X \propto I$

116. Number of digit positions in integers in $X \propto I$

117. Number of digit positions in integers in $X \propto I$

118. Number of digits in positive integers in $X \propto I$

119. Case structure according to key vector $G \propto A$

120. For-loop ending construct $X \propto B$

121. Case structure with integer switch $X \propto I$

122. For-loop ending construct $X \propto I$

123. Conditional branch to line $Y \propto B$

124. Conditional branch out of program $X \propto B$

125. Conditional branch depending on sign of $X \propto I$

126. Continuing from line $Y$ (if $X > 0$) or exit $X \propto D$

127. Case structure using levels with limits $G \propto D$

128. Case structure with logical switch (preferring from start) $X \propto B$

129. Conditional branch out of program $X \propto B$

132. Test for symmetricity of matrix $X \propto A$

EXECUTE
133. Using a variable named according to X X=A0; Y=A 
   "VAR'(,"TX),'+"Y' 
134. Rounding to DPP 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'εF) F=A1; X=D1 
   '=[DIO+(0(-1+1/A)+1+[(/A)-l/A=0.-A=-l+0.5+A]/] 
138. Conversion of each row to a number (default zero) X=C2 
   (XV. ≠") '/'4+0 '''X' 
139. Test for symmetricity of matrix X=A2 
   "((X∧.=)='X') '/'4'XY' 
140. Execution of expression X with default value Y=D1 
   "X∧.='Y' '/'4'X' 
141. Changing X if a new input value is given X=A1 
   "X∧.2FVftq∨HrVJthVQiQ2FVftq∨HrVJthVQiQ2VxVN?tVq=2]A2FVftq∨HrVJthVQiQ2\]A2FVftq∨HrVJthVQiQ2/"X' 
142. Definite integral of F(X) in range Y with G steps ('X'εF) F=A1; G=0; 
   Y=D1; ρY ↔ 2 
143. Using default value 100 if X does not exist X=A1 
   "3#DNC 'X' '/'4'X100' 
144. Conditional execution X=B0; Y=A1 
   "X∧.'n ...' 
145. Assign values of expressions in X to variables named in Y=X+C2; Y=C2 
   A assembler('X',',',',O',',X',
146. Sum of numbers in character matrix X into a scalar X=X11 
   "$X' 
147. Using default value 100 if X does not exist X=A1 
   "$3#DNC 'X' '/'4'X100' 
148. Conditional execution X=B0; Y=A1 
   "$X∧.'n ...' 
149. Giving a numeric default value for input X=D0 
   1ρ(A,0,1,0)*X,X 
150. Assign values of expressions in X to variables named in Y=X+C2; Y=C2 
   A assembler('X',',',',0',',Y',
151. Evaluation of several expressions; results form a vector X=A 
   '1002QtiFV12NirNFVqQtiFVA2rightq∨HrVJthVQiQ/,A←'1',2for%HtX11 
152. Formatting with zero values replaced with blanks X=A 
   "$X' 
153. Number of digit positions in scalar X (depends on DPP) X=D0 
   ρTX 
154. Numeric headers (elements of X) for rows of table Y=X=D1; Y=A2 
   "$X' 
155. Formatting a numerical vector to run down the page X=D1 
   "$X' 
156. Representation of current date (ascending format) 
   $A A[('='A)/loA]+', A=A=03dt 
157. Representation of current date (American) 
   $A A[('='A)/loA]+', A=A=01dt 
158. Formatting with zero values replaced with blanks X=A 
   "$X' 
159. Number of digit positions in scalar X (depends on DPP) X=D0 
   ρTX 
160. Leading zeroes for X in fields of width Y X=I1; Y=I0; X=0 
   O i(2y+1)x=+,0Y 
161. Row-by-row formatting (width G) of X with Y decimals per row X=D2; 
   Y=I1; G=0 
   (G[/G,x])ρ2 1 30(0,ρX)ρ(0,G,[1.1]Y)ρTX 
162. Formatting X with H decimals in fields of width G X=D; G=I1; H=I1 
   (G,[1.1]H)ρTX 
ROLL / DEAL 
163. Y-shaped array of random numbers within ( X[1],X[2] ] X=I1; Y=I1 
165. Removing punctuation characters X+A1
   (-X'...;?'')/X
166. Choosing Y objects out of \( X \) with replacement (roll) Y+I; X+I
   ?Y\( \)X
167. Choosing Y objects out of \( X \) without replacement (deal) X+I0; Y+I0
   Y\( \)X

GEOMETRICAL FUNCTIONS ○
168. Arctan \( Y/X \) X=D; Y=D
   \( ((X\neq0)x^30Yx+x=0)+o((X=0)x^5xY)+(X<0)x^1-2xy<0 \)
169. Conversion from degrees to radians X+D
   X\( \times180\)
170. Conversion from radians to degrees X+D
   X\( \times180\)\( \div1 \)

171. Rotation matrix for angle X (in radians) counter-clockwise X+D0
   2 2p1 \( \div1 \) 2 2 1 1 20X

FACTORIAL / BINOMIAL !
172. Number of permutations of X objects taken Y at a time X+D; Y+D
   (!Y)\( \times1 \)Y\( \)X
173. Value of Taylor series with coefficients Y at point X X+D0; Y+D1
   /Y\( \div(X^A)\div1t^pY \)
174. Poisson distribution of states X with average number Y X+I; Y+D0
   (*-Y)\( \times(Y^X)\div1 \)
175. Gamma function X+D0
    !X-1
176. Binomial distribution of X trials with probability Y X+I0; Y+D0
    (A\( !1 \)X)(Y\( \times1 \)A)\( \times1 \)(Y-A\( \times \)D0-1\( \times \)X+1
177. Beta function X+D0; Y+D0
    +Y\( \times(X-1)\)Y+X-1
178. Selecting elements satisfying condition X, others to 1 X+B; Y+D
    X\( \times \)Y!
179. Number of combinations of X objects taken Y at a time X+D; Y+D
    Y\( \times \)X

INDEX OF \( \)
180. Removing elements Y from beginning and end of vector X X+A1; Y+A
    ((A\( !1 \)-D0)+D0-(\( \Phi \times XeY \)\( \times \)I)\( \times1 \))\( \times1 \)
181. Alphabetical comparison with alphabets G X+A; Y+\( A \)
    (G\( X \))
182. Sum over elements of X determined by elements of Y X+D1; Y+D1
    X+\( \times \)Y\( = \纾11 \)\( pYY \times1 \)Y/Y
183. First occurrence of string X in string Y X+I1; Y+\( A \)
    (/\( \times1 \)1+t\( \times P \)\( \times X \),=Y)\( \times1 \)I1
184. Removing duplicate rows X+\( A \)
    ((A\( A \))\( = \)\( p \)A\( \times \)D0++\( \times1 \)X,\( \times \)AQ)\( \times \)X
185. First occurrence of string X in matrix Y X+\( A \); Y+\( A \); \( \times1 \)t\( \times p \)Y\( \rightarrow1 \)\( p \)X
    (Y\( \times1 \)X)\( \times1 \)I1
186. Indices of ones in logical vector X X+\( B \)
    (+\( \times \)X)\( \times1 \)\( \times1 \)\( \times1 \)
187. Executing costly monadic function F on repetitive arguments X+\( A \)
    (F\( B \)X)\( \times1 \)\( B \)\( = \times1 \)X(X\( \times1 \)X)\( \times1 \)pX
188. Index of first\( \) maximum element of X X+D1
    X1\( \times \)X
189. Index of first occurrence of elements of Y X+C1; Y+C1
    \( I \times1 \)X\( \times1 \)Y
190. Index of first minimum element of X X+D1
    X1\( \times \)X
191. Test if each element of X occurs only once X+\( A \)
    \( / \times(X\( X \)X)\( = \times1 \)pX
192. Test if all elements of vector X are equal X+\( A \)
    \( / \times(D1X)\( = \times1 \)
193. Interpretation of roman numbers X+\( A \)
    (+/A\( \times \)1^A<1\( \times \)\( \Phi \times eX \)\( =1 \)0,1000 500 100 50 10 5 1['MDCLXVI']\( \times1 \)
194. Removing elements Y from end of vector X X+\( A \); Y+\( A \)
    (D0+(\( \times1 \)\( \times1 \)XeY)\( \times1 \))\( \times1 \)
195. Removing trailing blanks X+C1
    (1-\( \times1 \)(\( p \)\( \times1 \)'\( \times \)X)\( \times1 \))\( \times1 \)
196. Index of last occurrence of Y in X (D0-1 if not found) X+\( A \); Y+\( A \)
199. Index of last occurrence of Y in X (0 if not found) X*1A; Y*1A
(1+X)*-1(1+Y)

200. Index of last occurrence of Y in X, counted from the rear X*1A; Y*1A
(1+X)*-1(1+Y)

201. Index of first occurrence of G in X (circularly) after Y X*1A; Y*1I0; G*1A
G1O+1(1+X)*1Y+(1+Y)*1G

202. Alphabetizing X; equal alphabets in same column of Y Y*1C2; X*1C1

203. Changing index of an unfound element to zero Y*1A; X*1A
(1+Y)*Y

204. Replacing elements of G in set X with corresponding Y X*1A; Y*1A, G*1A
(1+X)*1G*A

205. Removing duplicate elements (nub) X*1A
(1+X)*1Y

206. First word in X X*1C1

207. Removing elements Y from beginning of vector X X*1A1; Y*1A
((1+(X*0)))*-1D1O) Y

208. Removing leading zeroes X*1A1
(1+(X*0)))*-1D1O) Y

209. Index of first one after index Y in X G*1I0; X*1B1
Y+(1+X)*1I

210. Changing index of an unfound element to zero (not effective) X*1A; Y*1A
(1+(X*0)))*1Y

211. Indicator of first occurrence of each unique element of X X*1A1
(1+X)*1Y

212. Inverting a permutation X*1I1
X1t1P

213. Index of first differing element in vectors X and Y X*1A1; Y*1A
(1+(X*0)))*-1D1O) Y

214. Which elements of X are not in set Y (difference of sets) X*1A; Y*1A
(1+X)*1Y

215. Changing numeric code X into corresponding name in Y X*1D; Y*1D1; G*1C2
G1Y1X;

216. Index of key Y in key vector X X*1A1; Y*1A
X1t1Y

217. Conversion from characters to numeric codes X*1A
DA1V

218. Index of first satisfied condition in X X*1B1
X1t1

OUTER PRODUCT 1D 1D

219. Pascal’s triangle of order X (binomial coefficients) X*1I0
@A 1D 1D

220. Maximum table X*1I0
(1X)*1X

221. Number of decimals (up to Y) of elements of X X*1D; Y*1I0
0*/((10*0+10*D1O-1Y)+1)*1.1X10*0+1Y

222. Greatest common divisor of elements of X X*1I1
1/(10*0=A1X)*1X+1I1

223. Divisibility table X*1I1
O=((11+X)*1X)

224. All primes up to X X*1I0
(1+Y*0=1X)*1.1X1X

OUTER PRODUCT 1D 1D

225. Compound interest for principals Y at rates G % in times X X*1D; Y*1D; G*1D
Y*1X1+G100)*1X

226. Product of two polynomials with coefficients X and Y X*1D1; Y*1D1
+1(1D1O-1P*X)*1Y*0I1X

228. Shur product X*1D2; Y*1D2
1 2 1 2X 1 2

229. Direct matrix product X*1D2; Y*1D2
1 3 2 4X 1 3

230. Multiplication table X*1I0
(1X)*1X

231. Replicating a dimension of rank three array X Y-fold Y*1I0; X*1A3
232. X = \((Y\rho)^\ast \times I(X)[2]::\)
233. Move set of points \(X\) into first quadrant \(X+D\)
\(X^\circ: X^\ast \sim 1\)
234. Test relations of elements of \(X\) to range \(Y\); result in \(-2.2 \times D; Y+D; 2=\sim 1+\rho Y\)
\(+/X^\circ: Y\)
235. Occurrences of string \(X\) in string \(Y\) \(X+\text{A1}; Y+\text{A1}\)
\((Y[A^\circ: +1\times \rho X]^{-}=X)/A^\circ: (A+1\times X)/\rho A^\circ: (1-\rho X)^\ast Y\)
236. Sum of common parts of matrices (matrix sum) \(X+D; Y+D\)
\(1 2 1 \times X^\circ: Y\)
237. Adding \(X\) to each column of \(Y\) \(X+D; Y+D\)
\(1 1 \times \rho X^\circ: Y\)
238. Adding \(X\) to each row of \(Y\) \(X+D; Y+D\)
\(2 1 \times X^\circ: Y\)
239. Adding \(X\) to each row of \(Y\) \(X+D; Y+D\)
\(1 2 \times Y^\circ: X\)
240. Hilbert matrix of order \(X\)
\(+/1+(\times X)^\circ: Y\)
241. Moving index of width \(Y\) for vector \(X\) \(X+\text{A1}; Y+\text{I0}\)
\((0,1\times (X-Y)^\circ: Y)\).
242. Indices of subvectors of length \(Y\) starting at \(X+1\) \(X+I1; Y+I0\)
\(X^\circ+; Y\)
243. Reshaping numeric vector \(X\) into a one-column matrix \(X+D; Y+D\)
\(X^\circ+: 0\)
244. Annuity coefficient: \(X\) periods at interest rate \(Y\%\)
\(((\rho A)\rho Y\times 100)\times A^\circ: (1+Y\times 100)^\circ: X\)
245. Matrix with \(X[i]\) trailing zeroes on row \(i\)
\((\times X)^\circ: Y\)
246. Matrix with \(X[i]\) leading zeroes on row \(i\)
\((\times Y)^\circ: X\)
247. Distribution of \(X\) into intervals between \(Y\); \(X+D; Y+D\)
\(+/((\sim Y)^\circ: X)\).
248. Histogram (distribution barchart; down the page) \(X+I1\)
\(' O'[\times \Phi(I/A)^\circ: X] \times A^\circ+/(\times X)-Y)^\circ: X\)
249. Barchart of integer values (down the page) \(X+I1\)
\(' O'[\times \Phi(I/X)^\circ: X]
250. Test if \(X\) is an upper triangular matrix \(X+D; Y+D\)
\(^/=X\times Y)^\circ: X\)
251. Classification of elements \(Y\) into \(X\) classes of equal size \(X+I0; Y+D\)
\(+/((A\times X)^\circ: A^\circ+1+Y)^\circ: X\)
252. Classification of \(X[I]\) leading ones on row \(i\)
\(X^\circ: \times Y^\circ+\Phi(I/X)
253. Comparison table \(X+I1\)
\(X^\circ: \times X, 0\)
254. Barchart of \(X\) with height \(Y\) (across the page) \(X+D; Y+D\)
\(' O'[\times \Phi(X)^\circ: X] \times (Y+Y)^\circ: Y\)
255. Barchart of integer values (across the page) \(X+I1\)
\(' O'[\times \Phi(X)^\circ: I/X]
256. Classification of \(X[I]\) trailing ones on row \(i\)
\(X^\circ: \times Y^\circ+\Phi(I/X)
257. Test if \(X\) is a lower triangular matrix \(X+D\)
\(^/=X\times Y)^\circ: X\)
258. Test if \(X\) is within range \([Y[1], Y[2]) \times D; Y+D\)
\('#/X)^\circ: X\)
259. Ordinal numbers of words in \(X\) that indices \(Y\) point to \(X+C1; Y+I\)
\([D10+/Y)^\circ: ('-Y)^\circ: X\)
260. Which class do elements of \(X\) belong to \(X+D\)
267. X×X lower triangular matrix X+I0
(\(iX\))=\(iX\)

268. Moving all blanks to end of each row X+C
(\(pX\))=\(pX\)

269. Justifying right fields of X (lengths Y) to length G X+1; Y+1; G+0
(\(Y,\))=\(G\)

270. Justifying left fields of X (lengths Y) to length G X+1; Y+1; G+0
(\(Y,\))=\(G\)

OUTER PRODUCT \(\times\) \(\neq\) \(\neq\)
271. Indices of elements of Y in corr. rows of X (X[i;]Y[i;]) X+1; Y+1; G+0
\(i++/\\
273. Indicating equal elements of X as a logical matrix X+1
\(Q\times\)=\(Q\times\)

274. Changing connection matrix X to a node matrix X+1
\((1-1\times\).=\(Q\times\)+X\(1\)\(\times\)=\(Q\times\)

276. Sums according to codes G X+1; Y+1; G+0
\(G\times\)=\(X\)

277. Removing duplicate elements (nub) X+0
(1 1\(Q<\times\).=.\(X\)).\(/\)

278. Changing node matrix X (start,ends) to a connection matrix X+1
\(=/\(X\))=\(X\)

279. Test if all elements of vector X are equal X+0
\(\vee\).\(/\)\(0\).

280. Test if elements of X belong to corr. row of Y (X[i;]Y[i;]) X+1; Y+1; G+0
\(\vee\).\(/\)\(1\)\(2\)\(1\)\(3\)\(Q\times\).=.\(Y\)

281. Test if X is a permutation vector X+0
\(\vee\).\(/\)=\(X\).\(/\)=\(pX\)

282. Occurrences of string X in string Y X+1; Y+1
(\((\vee\).\(/\))(\(X\)\(+\)\(pX\))(\(X\)\(+\)\(pY\))\(X\))\(\times\)=\(Y\)

283. Division to Y classes with width H, minimum G X+D; Y+0; G+D0; H+0
\(+/\(X\))=\(X\)\(\times\)=\(H\)

285. Repeat matrix X+1; Y+1
(\((\vee\).\(/\))(\(X\)\(\times\)=\(Y\))\(X\))\(\times\)=\(X\)

286. X×X identity matrix X+1
(\(iX\))=\(iX\)

INNER PRODUCT \(\times\) \(\times\) \(\times\) \(\times\) \(\times\) \(\neq\)
287. Maxima of elements of subsets of X specified by Y X+1; Y+1
\((A+)(X-A+)/(X))\times\times\times\)

288. Indices of last non-blanks in rows X+C
(\(\vee\).\(/\)\(X\))\(\times\)=\(1\)\(pX\)

289. Maximum of X with weights Y X+1; Y+1
\(Y\times\)

290. Minimum of X with weights Y X+1; Y+1
\(Y\times\)

292. Extending a distance table to next leg X+D\(2\)
X+\(X\)\(\times\)+X

293. A way to combine trigonometric functions (sin X cos Y) X+D\(0\); Y+D\(0\)
\(2\times\) \(2\times\) \(2\times\)

294. Sine of a complex number X+D\(2\); Y+D\(2\)
\((2\times\) \(2\times\) \(2\times\) \(2\)) \(X\times\)

295. Products over subsets of X specified by Y X+1; Y+1
\(X\) \(X\) \(X\) \(X\) \(X\)

296. Sum of squares of X X+1
\(X\) \(X\) \(X\) \(X\) \(X\)

297. Randomizing random numbers (in DLX in a workspace)
\(DRL\times\) \(DTS\)

INNER PRODUCT \(\times\) \(\times\) \(\times\) \(\times\) \(\times\) \(\times\)
298. Extending a transitive binary relation X+2
X+XV.X

299. Test if X is within range [ Y[1;], Y[2;] ] X+D\(0\); Y+D\(2\); 1\(pY\) \(\times\) 2 X<. X<

300. Test if X is within range ( Y[1;], Y[2;] ] X+D\(0\); Y+D\(2\); 1\(pY\) \(\times\) 2 X<. Y
301. Test if X is within range (Y[1:], Y[2:]) \( X \in D; Y+D2; \downarrow \rho Y \leftrightarrow 2 \)\( X.<\psi Y \)
302. Test if the elements of X are ascending \( X \in D1 \)\( X.<,\geq \psi X \)
303. Test if X is an integer within range \([G,H) X \in I0; G \in I0; H \in I0\)\( -X.<, \geq (|X|,G,H) \)
304. Test if X is within range (Y[1:], Y[2:]) \( X \in D; Y+D2; \downarrow \rho Y \leftrightarrow 2 \)\( (X[.1+\rho X]) \rightarrow \psi Y \)

INNER PRODUCT \( v . \neq \land . \neq +. \neq +. = \)

306. Removing trailing blank columns \( X \in C2 \)
(\( \phi \backslash \psi \psi 'v . \neq \psi X \)/X)
307. Removing leading blank rows \( X \in C2 \)
(\( \psi \land \psi \psi 'v . \neq ' \))\( \land X \)
308. Removing leading blank columns \( X \in C2 \)
(\( \psi \land \psi \psi 'v . \neq \psi X \)/X)
309. Index of first occurrences of rows of X as rows of Y \( X \in A, Y \in A2 \)
\( \Omega I0++\land \land Y \psi \neq \psi X \)
310. 'X1Y' for rows of matrices \( X \in A2; Y \in A2 \)
\( \Omega I0++\land \land X \psi \neq \psi Y \)
311. Removing duplicate blank rows \( X \in C2 \)
(\( A1\downarrow \psi +A1, A \in X \land . \neq ' \))\( \land X \)
312. Removing duplicate blank columns \( X \in C2 \)
(\( A1\downarrow \psi -I+A1, 'v . \neq X \))\( \land X \)
313. Removing blank columns \( X \in C2 \)
(\( ' v . \neq X \))\( \land X \)
314. Removing blank rows \( X \in C2 \)
(\( X . \neq ' \))\( \land X \)
315. Test if rows of X contain elements differing from Y \( X \in A; Y \in A0 \)
\( X \land . \neq Y \)
316. Removing trailing blank rows \( X \in C2 \)
(\( -2++\land \land X \land . \neq ' \))\( \land X \)
317. Removing duplicate rows \( X \in A2 \)
(\( \psi \land \psi \psi 'X \land . \neq \psi X \))\( \land X \)
318. Removing duplicate rows \( X \in A2 \)
(\( 1\downarrow \psi 'X \land . \neq \psi X \))\( \land X \)
319. Test if circular lists are equal (excluding phase) \( X \in A1; Y \in A1 \)
\( v /Y \land . \neq \phi (\psi X) \phi (2\rho X) \psi X \)
320. Test if all elements of vector X are equal \( X \in B1 \)
\( X \land . \neq v /X \)
321. Test if all elements of vector X are equal \( X \in B1 \)
\( X \land . \neq v /X \)
322. Rows of matrix X starting with string Y \( X \in A2; Y \in A1 \)
(\( (((\psi p X), \rho Y \psi Y) \land . \neq Y) \))\( \land X \)
323. Occurrences of string X in string Y \( X \in A1; Y \in A1 \)
(\( (A \land X \land . \neq \phi (A,1+\rho Y) \psi Y) /tr (\psi Y)+I-A+\rho X \))\( \land X \)
324. Test if vector Y is a row of array X \( X \in A; Y \in A1 \)
\( 1eX \land . \neq Y \)
325. Comparing vector Y with rows of array X \( X \in A; Y \in A1 \)
\( X \land . \neq Y \)
326. Word lengths of words in list X \( X \in C \)
\( X \land . \neq ' \)
327. Number of occurrences of scalar X in array Y \( X \in A0; Y \in A \)
\( X \land . \neq Y \)
328. Counting pairwise matches (equal elements) in two vectors \( X \in A1; Y \in A1 \)
\( X \land . \neq Y \)

INNER PRODUCT \( -+. +. +. +. \)
329. Sum of alternating reciprocal series \( Y+X \in D1; Y \in D1 \)
\( Y \land . \neq X \)
330. Limits X to fit in \( \psi \) field \( Y[1,2] X \in D; Y \in I1 \)
(\( X\backslash I A) \downarrow I A-(2201111.1+10*(-1+iY),-Y+Y>99 0 \))
331. Value of polynomial with coefficients Y at point X \( X \in D0; Y \in D \)
(\( X^*1+\rho Y*.+X \))\( \land X \)
332. Arithmetic average (mean value) of X weighted by Y \( X \in D1; Y \in D1 \)
(\( Y+.+X \))\( \psi X \)
333. Scalar (dot) product of vectors \( X \in D1; Y \in D1 \)
\( Y+.+X \)
334. Sum of squares of X \( X \cdot X \)
X + X

335. Summation over subsets of X specified by Y \( X + A_1; Y + B \)
X + X

336. Matrix product X\(\cdot\)D; Y\(\cdot\); \(\sim\)\(\triangleright\) \(\rho\) \(\leftrightarrow\) \(\triangleright\) \(\rho\) \(Y\)
X + X

337. Sum of reciprocal series Y\(+\)X \(\cdot\)D; Y\(\cdot\)
Y + X

SCAN \(\backslash\) \(\backslash\) \(\times\) - -

338. Groups of ones in Y pointed to by X (or trailing parts) X\(+\)B; Y\(+\)B
Y \(\wedge\) \(A\backslash\) \(\times\)X \(\wedge\)Y \(\wedge\) \(\sim\)0,Y

339. Test if X is in ascending order along direction Y X\(\cdot\)D; Y\(\cdot\)I0
\(\wedge\)\(\backslash\)X\(=\)\(\backslash\)YX

340. Duplicating element of X belonging to Y, \(\triangleright\) \(\rho\) \(X\) \(\cdot\)Y \(\cdot\)
X + X

341. Sum of reciprocal series Y\(\div\)X \(\cdot\)D; Y\(\div\)
Y + X

SCAN \(\backslash\) < \(\backslash\) \# \(\backslash\)

342. Value of Taylor series with coefficients Y at point X \(X + D0; Y + D1 \)
+\(Y \times 1, X \times 1 + 1 + Y\)

343. Alternating series (1 \(\sim\) 1 2 \(\sim\) 2 3 \(\sim\) 3 ...) X\(\cdot\)I0
- \(\backslash\)X

SCAN \(\backslash\) \(\backslash\) < \(\backslash\) \# \(\backslash\)

344. Value of saddle point X\(\div\)D2
(\(<\backslash, (x = (pX)\rho\phi x) \times = \phi(\phi x)\rho/ x)\) / \(x\),

345. First one (turn off all ones after first one) X\(+\)B
< \(\backslash\)X

346. Not first zero (turn on all zeroes after first zero) X\(+\)B
\(\leq\) \X

347. Running parity (\(\neq\)) over subvectors of Y indicated by X X\(+\)B1; Y\(+\)B1
\(\neq\)\(Y\times X\)\(\backslash\) \(\sim\)0,A\(\times\)X/\(\sim\)0,Y

348. Not leading zeroes (\(\forall\)) in each subvector of Y indicated by X X\(+\)B1; Y\(+\)B1
\(\neq\)\(Y\times X\)\(\backslash\)A\(\backslash\) \(\sim\)0,A\(\sim\)(Y\(\times\)X)/Y

349. Locations of texts between and including quotes X\(\sim\)C1
A\(\sim\)10,A\(\neq\)\X

350. Locations of texts between quotes X\(\sim\)C1
A\(\sim\)10,A\(\neq\)\X

351. Joining pairs of ones X\(\sim\)B
X\(\neq\)X

352. Not leading zeroes (turn on all zeroes after first one) X\(+\)B
\(\neq\) \X

SCAN \(\backslash\) \(\backslash\) \(\wedge\)

353. Removing leading and trailing blanks X\(\sim\)C1
((\(\phi\)\(\phi\)\(A\)\(\wedge\)A\(\sim\) ' 'X)/X

354. First group of ones X\(+\)B
X\(\wedge\)X=\X

355. Removing trailing blank columns X\(\sim\)C2
(\(\phi\)\(\phi\)\(F\) ' 'X)/X

356. Removing leading blanks X\(\sim\)C1
(\(\phi\)\(\phi\)\(F\) ' 'X)/X

357. Not leading zeroes (turn on all zeroes after first one) X\(+\)B
\(\vee\) \X

358. Centering character array X with ragged edges X\(\sim\)C
(A\(\sim\)0.5X(A\(\div\) + ' 'A)\(\div\) + ' 'A\(\sim\) ' 'X)\(\phi\)X

359. Decommenting a matrix representation of a function (DCR) X\(\sim\)C2
(\(\backslash\)A\(\div\) (pX)\(\rho\),A)\(\wedge\)A\(\wedge\)('a'\(\sim\)X\(\backslash\)X=' ''))/X

360. Centering character array X with only right edge ragged X\(\sim\)C
(A\(\sim\)0.5X(A\(\div\) + ' 'A)\(\div\) + ' 'A\(\sim\) ' 'X)\(\phi\)X
(-0.5*x+y/\ ' =\#X)\#X
370.Justifying right X+C
(-+/\#\ ' =\#X)\#X
371.Removing trailing blanks X+C1
(-+/\#\ ' =\#X)\#X
372.Justifying left X+C
(+//\ ' =\#X)\#X
373.Editing X with Y v-wise X+C1; Y+C1
((-\p\#A\#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+C1
Dl+0+/\\#X
377.Leading ones (turn off all ones after first zero) X+B
^\X
SCAN+
378.Vector (X[i]p1),(Y[i]p0),(X[2]p1),... Q+I1; Y+I1
(t+/X,Y)ε\{\\{1+1\#0,((1+/X)ε+X)Y
379.Replicate Y[i] X[i] times (for all i) X+I1; Y+A1
((X\#0)/Y){\{1-1\#(1+/X)ε+X
Dl+0+i1+((1+/X)ε+\\#O\#X)\Y\-1+i1,Y+X
381.Replicate Y[i] X[i] times (for all i) X+I1; Y+A1; ^/0
Y[+(\1+/X)ε+1+i+++0,X]
382.Replicate Y[i] X[i] times (for all i) X+I1; Y+A1; ^/0
Y[Dl+0+(1+/X)Dl+0+/\\#O\#X]
383.Cumulative sums (+\) over subvectors of Y indicated by X X+B1; Y+D1
+\\-X\#A\-1+0,A-+X\+/1+i0,Y
384.Sums over (+) subvectors of Y, lengths in X X+I1; Y+D1
A-1+i0,A+=+(Y)[+(X]+]
386.X first figurate numbers X+I0
+/\+\X
387.Insert vector for X[i] zeroes after i:th subvector X+I1; Y+B1
(t+/\p\#Y)ε\{1+1\#0,(1\#Y)\X
388.Open a gap of X[i] after Y[G[i]] (for all i) X+I1; Y+A1; G+I1
(((t+/\p\#Y)ε\{1+1\#0,((1\#Y)ε\G)\X)Y
389.Open a gap of X[i] before Y[G[i]] (for all i) X+I1; Y+A1; G+I1
(((t+/\p\#Y)ε\{1+1\#0,((1\#Y)ε\G)\X)Y
390.Changing lengths X of subvectors to starting indicators X+I1
A \# A[+(+1+i0\#O\#X)\#1 \# A=(+(X)p0
391.Changing lengths X of subvectors to ending indicators X+I1
(t+/X)ε+(X)--\\#O\#X
392.Changing lengths X of subvectors to starting indicators X+I1
(t+/X)ε+(Dl\#O\#X)
393.Insert vector for X[i] elements before i:th element X+I1
(t+/A)ε\{A-1+iX
394.Sums over (+) subvectors of Y indicated by X X+B1; Y+D1
A-1+i0,A+=+(A\#X)/+\\+Y
395.Fifo stock Y decremented with X units Y+D1; X+D0
G-1+i0,G\#0+(+Y)-X
396.Locations of texts between and including quotes X+C1
A\^\#1+i0,A\#2+\X=''''
397.Locations of texts between quotes X+C1
A\^\#1+i0,A\#2+\X='''
398.X:th subvector of Y (subvectors separated by Y[i]) Y+I1; X+I0
i+X==1+i0Y)\Y
399.Locating field number Y starting with first element of X Y+I0; X+C1
(Y==1+X==1+iX)
400.Sum elements of X marked by succeeding identicals in Y X+D1; Y+D1
A-1+i0,A=(Y+i1+iY,0)/+(X
401.Groups of ones in Y pointed to by X X+B1; Y+B1
Y\#Aε(X\#Y)/A++Y-1+i0,Y
402.ith starting indicators X X+B1; Y+B1
(+iX)εY/\p\#Y
403.G:th subvector of Y (subvectors indicated by X) X+X1; Y+I1; G+I0
(G==1\#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 \( X+1 \)
\( '+(' ("x")=140, ')'='X \)
406. Starting positions of subvectors having lengths \( X \times I+1 \)
\( '+(' ("x")=140, ')'='X \)
407. Changing lengths \( X \) of subvectors of \( Y \) to ending indicators \( X=I+1 \)
\( (10Y)\epsilon(+X)=--DIO \)
408. Changing lengths \( X \) of subvectors of \( Y \) to starting indicators \( X=I+1 \)
\( (10Y)\epsilon(+DIO,X \)
409. \( X \) first triangular numbers \( X=I+0 \)
\(+\ X \)
410. Cumulative sum \( X=\ D \)
\(+\ X \)

REDUCTION \( \omega\ /\ \div/\ -/\ \times/ \)
411. Complementary angle (\( \arccos \) \( \sin \)) \( X=\ D+0 \)
\( \omega/ \times 1 \ X \)
412. Evaluating a two-row determinant \( X=\ D+2 \)
\(-/\times 0\ 1 \ ex \)
413. Evaluating a two-row determinant \( X=\ D+2 \)
\(-/\times 0\ 10 \ X \)
414. Area of triangle with side lengths in \( X \) (Heron's formula) \( X=\ D+1 \), \( 3 \leftrightarrow \rho \ X \)
\((x/+/x+2)-0,X)\ast .5 \)
415. Juxtapositioning planes of rank \( 3 \) array \( X=\ A+3 \)
\((x/2\ 2\rho_1,\rho_2)\rho_2\ 1\ 3X \)
416. Number of rows in array \( X \) (also of a vector) \( X=\ A \)
\( \times/ \times 1\ 4X \)
417. (Real) solution of quadratic equation with coefficients \( X=\ D+1 \), \( 3 \leftrightarrow \rho \ X \)
\((-X[2]-1\times((X[2])\ast 2-\times/4,X[1\ 3])\ast .5)\times2\times X[1] \)
418. Reshaping planes of rank \( 3 \) array to rows of a matrix \( X=\ A+3 \)
\((x/2\ 2\rho_1,\rho_2)\rho_2\ 1\ 3X \)
419. Reshaping planes of rank \( 3 \) array to a matrix \( X=\ A+3 \)
\((x/2\ 2\rho_1,\rho_2)\rho_2\ 1\ 3X \)
420. Number of elements (also of a scalar) \( X=\ A \)
\( \times/ \times X \)
421. Product of elements of \( X \times D+1 \)
\( \times/ \times X \)
422. Alternating product \( X=\ D \)
\(+/ \times X \)
423. Centering text line \( X \) into a field of width \( Y \times C+1 \), \( Y=I+0 \)
\( Y\left((l+/+, .5\times Y,\rho X)\rho_1 ',)\times X \)
424. Alternating sum \( X=\ D+1 \)
\(-/ \times X \)

REDUCTION \( \ell /\ \ell /\ \ell / \)
425. Test if all elements of vector \( X \) are equal \( X=\ D+1 \)
\( (\ell /\times X)\ell / \ell / \ X \)
426. Size of range of elements of \( X \times D+1 \)
\( (\ell /\times X)\ell / \ell / \ X \)
427. Conversion of set of positive integers \( X \) to a mask \( X=I+1 \)
\( (\ell /\ell X)\ell X \)
428. Negative infinity; the smallest representable value \( \ell / \ell 0 \)
429. Vectors as column matrices in catenation beneath each other \( X=\ A+1\ 2 \), \( Y=\ A+1\ 2 \)
\( X,[I+, .5\ell /((\rho X),\rho Y)Y \)
430. Vectors as row matrices in catenation upon each other \( X=\ A+1\ 2 \), \( Y=\ A+1\ 2 \)
\( X,[I+, .5\ell /((\rho X),\rho Y)Y \)
431. Quick membership (\( \epsilon \)) for positive integers \( X=I+1 \), \( Y=I+1 \)
\( A[X] \land A[Y]=1 \land A=(\ell /X,Y)\rho 0 \)
432. Positive maximum, at least zero (also for empty \( X \)) \( X=\ D+1 \)
\( \ell / \times X, 0 \)
433. Maximum of elements of \( X \times D+1 \)
\( \ell / \times X \)
434. Positive infinity; the largest representable value
\( \ell / \ell 0 \)
435. Minimum of elements of \( X \times D+1 \)
\( \ell / \ell X \)

\end{enumerate}
REDUCTION \( \lor / \) 436. Test if all elements of vector \( X \) are equal \( X + B \)
\( \lor / 0 \ 1 \epsilon X \)
437. Test if all elements of vector \( X \) are equal \( X + B \)
\( (\land X) \lor \lor / X \)
438. Test if all elements of vector \( X \) are equal \( X + B \)
\( (\land X) = \lor / X \)
439. Test if all elements of vector \( X \) are equal \( X + B \)
\( \lor / X = \lor / X \)
440. Removing duplicate rows from ordered matrix \( X \times A^2 \)
\( (\lor / 1 \lor / X \lor / X = \lor / X, 1) / X \)
441. Vector having as many ones as \( X \) has rows \( X + A^2 \)
\( \lor / 0 / X \)
442. Test if \( X \) and \( Y \) have elements in common \( X + A \)
\( \lor / Y \lor / X \)
443. None, neither \( X + B \)
\( \lor / X \)
444. Any, anyone \( X + B \)
\( \lor / X \)
445. Test if all elements of vector \( X \) are equal \( X + B \)
\( \lor / 0 \ 1 \epsilon X \)
446. Parity \( X + B \)
\( \lor / X \)

REDUCTION \( \land / \) 447. Number of areas intersecting areas in \( X \times D^3 \) \( (n \times 2 \times \text{dim}) \)
\( + / A \lor / \land / X [(1 ; A ; F) \leq 2 1 3 X [(1 ; (A + i \lor X) ; p) 2 ; ] \)
448. Test if all elements of vector \( X \) are equal \( X + B \)
\( \land / X = 1 \lor X \)
449. Comparison of successive rows \( X + A^2 \)
\( \land / X = 1 \lor X \)
450. Test if all elements of vector \( X \) are equal \( X + A^1 \)
\( \land / X = 1 \lor X \)
451. Test if \( X \) is a valid APL name \( X + C^1 \)
\( \land / ((1 X) \lor / 10 A, X \lor / A = '0..9A..Z\Delta a..x\Delta)' \)
452. Test if all elements of vector \( X \) are equal \( X + A^1 \)
\( \land / X = 1 \lor X \)
453. Identity of two sets \( X + A^1 ; Y + A^1 \)
\( \lor / (X Y), Y = X \)
454. Test if \( X \) is a permutation vector \( X + I^1 \)
\( \land / (\lor X) \lor / X \)
455. Test if all elements of vector \( X \) are equal \( X + B \)
\( \lor / X \lor / X \)
456. Test if \( X \) is boolean \( X + A \)
\( \lor / X \lor / 0 \ lor X \)
457. Test if \( Y \) is a subset of \( X \) \( (Y \lor / X) \lor / X + A ; Y + A \)
\( \lor / Y \lor / X \)
458. Test if arrays of equal shape are identical \( X + A ; Y + A ; \lor X \leftrightarrow \lor Y \)
\( \lor / X = Y \)
459. Test if all elements of vector \( X \) are equal \( X + A^1 \)
\( \land / X = X [1] \)
460. Blank rows \( X + C^2 \)
\( \lor / ' = \lor X \)
461. All, both \( X + B \)
\( \lor / X \)

REDUCTION \( / \) 462. Standard deviation of \( X + D^1 \)
\( ((+/ (X - (+/ (X) + p X) + p X) + .5) \lor / X + p X) + .5 \)
463. \( Y \)th moment of \( X + D^1 \)
\( (+ / (X - (+/ (X) + p X) + p X) + Y ) + p X \)
464. Variance (dispersion) of \( X + D^1 \)
\( (+ / (X - (+/ (X) + p X) + p X) + 2 + p X \)
465. Arithmetic average (mean value), also for an empty array \( X + D \)
\( (+ / X) + 1 \lor p X \)
466. Test if all elements of vector \( X \) are equal \( X + B \)
\( 0 = (p X) (+ / X) \)
467. Average (mean value) of columns of matrix \( X + D^2 \)
(+/X)÷ıt(pX),l
468.Average (mean value) of rows of matrix X+D2
(+/X)÷ıt1,pX
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÷(pX)[Y]
471.Arithmetic average (mean value) X+D1
(+/X)÷pX
472Resistance 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
477.Number of elements satisfying condition X X+B1
+/X

REVERSE φ ø
478.Scan from end with function α X+A
φα\φX
479.The index of positive integers in Y X+I; Y+I1
480.'Transpose' of matrix X with column fields of width Y X+A2; G+I0
((φA)×1,Y)p2 1 3q(1φY,A+(ρX)+1,Y)ρX
482.Adding X to each column of Y X+D1; Y+D; (ρX)=ıtρY
Y+φ(φpY)ρX
483.Matrix with shape of Y and X as its columns X+A1; Y+A2
φ(φpY)ρX
484.Derivate of polynomial X X+D1
"1+Xφ\"1+ρX
485.Reverse vector X on condition Y X+A1; Y+B0
,φ[ΩΩ+ΩY](1,ρX)ρX
486.Reshaping vector X into a one-column matrix X+A1
(φ1,ρX)ρX
487.Avoiding parentheses with help of reversal
(φ1, ...)

ROTATE φ ø
488.Vector (cross) product of vectors X+D; Y+D
((1φX)×1φY)-(1φX)×1φY
489.A magic square, side X X+I0; 1=X
A=A+(1X)/(X+2)ψ(X,X)ρX=X
490.Removing duplicates from an ordered vector X+A1
(-1φ1+(X#1φX),1)/X
491.An expression giving itself
1φ22p11p''1φ22p11p''
492.Transpose matrix X on condition Y X+A2; Y+B0
(Yφ1 2)QX
493.Any element true (v/) on each subvector of Y indicated by X X+B1; Y+B1
(Y/X)φA/AφA+(YφX)/X
494.All elements true (^/) on each subvector of Y indicated by X X+B1; Y+B1
(X/Y)φA/AφA+(YφX)/X
495.Removing leading, multiple and trailing Y's X+A1; Y+AO
(1φA)+(A1φA-Y)/X
496.Changing starting indicators X of subvectors to lengths X+B1
A-1φ0,A+(1φX)/1ρX
498.(Cyclic) compression of successive blanks X+C1
(A1φA-X#')/X
499.Aligning columns of matrix X to diagonals X+A2
(1-t1φX)φX
500.Aligning diagonals of matrix X to columns X+A2
(1+t1φX)φX
501.Diagonal matrix with elements of X X+D1
1. $I \cdot \phi((2\rho X)\rho_0), X$

2. Test if elements differ from previous ones (non-empty X) X+1
   $1 \cdot i \cdot X \neq i \phi X$

3. Test if elements differ from next ones (non-empty X) X+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot X, Y$

4. Replacing first element of X with Y X+1 Y+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot Y, X$

5. Replacing last element of X with Y X+1 Y+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot Y, X$

6. Ending points for X in indices pointed by Y X+1 Y+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot Y, X$

7. Replacing first element of X with Y X+1 Y+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot Y, X$

8. Replacing last element of X with Y X+1 Y+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot Y, X$

9. Major diagonal of array X X+1
   $1 \cdot i \cdot X \neq i \phi 1 \cdot Y, X$

10. Reshaping a 400x12 character matrix to fit into one page X+1

11. Transpose of planes of a rank three array X+1

12. Major diagonal of matrix X X+1

13. Selecting specific elements from a 'large' outer product X+1 Y+1

14. Test for antisymmetricity of square matrix X X+1

15. Test for symmetricity of square matrix X X+1

16. Matrix with X columns Y X+1 Y+1

17. Limiting X between Y[1] and Y[2], inclusive X+1 Y+1

18. Inserting vector Y to the end of matrix X X+1 Y+1

19. Widening matrix X to be compatible with Y X+1 Y+1

20. Lengthening matrix X to be compatible with Y X+1 Y+1

21. Reshaping non-empty lower-rank array X into a matrix X+1 Y+1

22. Take of at most X elements from Y X+1 Y+1

23. Limiting indices and giving a default value G X+1 Y+1 Y+1

24. Reshaping X into a matrix of width Y X+1 Y+1

25. Rounding to nearest even integer X+1

26. Rounding to nearest even integer for .5 = 1 | X X+1

27. Rounding to nearest even integer for .5 = 1 | X X+1

28. Arithmetic progression from X to Y with step G X+1 Y+1

29. Centering text line X into a field of width Y X+1 Y+1

30. Centering text line X into a field of width Y X+1 Y+1

31. Centering text line X into a field of width Y X+1 Y+1

32. Centering text line X into a field of width Y X+1 Y+1
\[-1.5 \times \rho X + \rho X \uparrow X\]

533. Test if integer \(X + D\)
\(X = \uparrow X\)

534. Rounding currencies to nearest 5 subunits \(X + D\)
\(0.5 \times X + 0.05\)

535. First part of numeric code \(\text{ABB} \times I\)
\(1 \times X + 1000\)

536. Rounding to \(X\) decimals \(X + I; Y + D\)
\((10^{-X}) \times 0.5 + Y \times 10^{X}\)

537. Rounding to nearest hundredth \(X + D\)
\(0.01 \times 0.5 + 100 \times X\)

538. Rounding to nearest integer \(X + D\)
\(0.5 + X\)

539. Demote floating point representations to integers \(X + I\)
\(1 \times X\)

540. Test if \(X\) is a leap year \(X + I\)
\((0 = 400 \times X) \vee (0 \neq 100 \times X) \wedge 0 = 4 \times X\)

541. Framing \(X + C 2\)
\('_', [1]'!', 'X', '!', [1]'!'\)

542. Magnitude of fractional part \(X + D\)
\(1 || X\)

543. Fractional part with sign \(X + D\)
\((\times X) || X\)

544. Increasing the dimension of \(X\) to multiple of \(Y\) \(X + A 1; Y + I 0\)
\(X, (Y - \rho X) + \rho X / X\)

545. Removing every \(Y\):th element of \(X + A 1; Y + I 0\)
\((0 \neq Y \times \rho X) / X\)

546. Taking every \(Y\):th element of \(X + A 1; Y + I 0\)
\((0 = Y \times \rho X) / X\)

547. Divisors of \(X + I 0\)
\((0 = A \times X) / A + \rho X\)

548. Removing every second element of \(X + A 1\)
\((2 \neq \rho X) / X\)

549. Elements of \(X\) divisible by \(Y X + D 1; Y + D 0 / 1\)
\((0 = Y \times X) / X\)

550. Ravel of a matrix to \(Y[1]\) columns with a gap of \(Y[2]\) \(X + A 2; Y + I 1\)
\((A \times Y[1] - 1 \times 1 \times \rho \times A + (\rho X) + (Y[1] - 1 \times \rho X), Y[2]) \times X\)

551. Test if even \(X + I\)
\(-2 \times X\)

552. Last part of numeric code \(\text{ABB} + I\)
\(1000 \times X\)

553. Fractional part \(X + D\)
\(1 || X\)

554. Increasing absolute value without change of sign \(X + D; Y + D\)
\((\times X) \times Y + | X|\)

555. Rounding to zero values of \(X\) close to zero \(X + D\)
\(X \times Y \leq X\)

556. Square of elements of \(X\) without change of sign \(X + D\)
\(X \times X\)

557. Choosing according to signum \(X + D; Y + A 1\)
\(Y[2 + \times X]\)

EXPAND \%

558. Not first zero \((<\)}\) in each subvector of \(Y\) indicated by \(X + B 1; Y + B 1\)
\(-(B X) \vee (B X) \wedge A > -1 + 0, A + (B X) / B - Y\)

559. First one \((<\)}\) in each subvector of \(Y\) indicated by \(X + B 1; Y + B 1\)
\((Y X) \vee (Y X) \wedge A > -1 + 0, A + (Y X) / Y\)

560. Replacing elements of \(X\) in set \(Y\) with blanks/zeroes \(X + A 0; Y + A 1\)
\(A \backslash (A \times X E Y) / X\)

561. Replacing elements of \(X\) not in set \(Y\) with blanks/zeroes \(X + A 1; Y + A 1\)
\(A \backslash (A \times X E Y) / X\)

562. Merging \(X\) and \(Y\) under control of \(G\) (mesh) \(X + A 1; Y + A 1; G + B 1\)
\(A \wedge [G \times G] \times Y \wedge A + G \times X\)

563. Replacing elements of \(X\) not satisfying \(Y\) with blanks/zeroes \(X + A; Y + B 1\)
564. Adding an empty row into X after rows Y X=A2; Y+I1
   \{(1+pX)+@1+pX)eY+@1+pX\}X
565. Test if numeric X*A1
   0e0\0pX
566. Adding an empty row into X after row Y X=A2; Y+I0
   ((Y+1)\1+pX)X
567. Underlining words X=C1
   X.[[1:1-1]("'#X'"')'']'
568. Using boolean matrix Y in expanding X X=A1; Y+B2
   (\pX)p(,Y)X
569. Spacing out text X=C1
   ((2*pX)p1 0)\X

COMPRESS / /
570. Lengths of groups of ones in X X=B1
   (A>0)/A+(1+A)-1+1+A-(-A)/\pA-0,X,0
571. Syllabization of a Finnish word X X=A1
   (\pA1,\pX)/A=A/\pA+(1+A,0)
572. Choosing a string according to boolean value G X=C1
   (\pX)\pX)(\pX)
573. Removing leading, multiple and trailing blanks X=C1
   (\'1)+((1+A,0)\va'"'#X')/X
574. Removing columns Y from array X X=A; Y+I1
   (\pX)\va'"'#X')/X
575. Removing trailing blanks X=C1
   (\'1)+('"#X')/\pX
576. Removing trailing blanks X=C1
   (\pX)\va'"'#X')/\pX
577. Lengths of subvectors of X having equal elements X=A1
   (1+A)-1+1+A-(A,1)/1+pA-1,(1+X)'-1+X
578. Field lengths of vector X; G ↔ ending indices X=A1; G+I1
   G-1+0,G+(\~1+IIO)+(((1+X)'-1+X),1)/\pX
579. Removing multiple and trailing blanks X=C1
   (((1+A,0)\va'"'#X')/X
580. Removing leading and multiple blanks X=C1
   (\pX)\va'"'#X')/X
581. Removing multiple blanks X=C1
   (\pX)\va'"'#X')/X
582. Removing duplicate Y's from vector X X=A1; Y+I0
   (\pX)\va'"'#X')/X
583. Indices of all occurrences of elements of Y in X X=A1; Y+A
   (\va'"'#X')/\pX
584. Indices of all occurrences of elements of Y in X X=A1; Y+A
   (\va'"'#X')/\pX
585. Union of sets, \cup X=A1; Y+A
   Y,-(\va'"'#X')/\pX
586. Elements of X not in Y (difference of sets) X=A1; Y+A
   -(\va'"'#X')/\pX
587. Rows of non-empty matrix X starting with a character in Y X=A2; Y+A
   (\va'"'#X')/\pX
588. Intersection of sets, \cap X=A1; Y+A
   (\va'"'#X')/\pX
589. Reduction with function \alpha in dimension Y, rank unchanged Y+I0; X=A
   ((\pX)\va'"'#X')/\pX)\alpha'/[Y]X
590. Replacing all values in G with Y X=A0; Y+A0; G+G
   (\pX)\va'"'#X')/\pX
591. Indices of all occurrences of Y in X X=A1; Y+A
   (\va'"'#X')/\pX
592. Replacing elements of G satisfying X with Y Y=A0; X+B1; G+G
   (\va'"'#X')/\pX
593. Removing duplicates from positive integers X=I1
   A/1+9999 A[X]=1 A=9999p0
594. Indices of ones in logical vector X X=B1
   X/\pX
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 α without respect to shape X=D
   α/,X
600. Reshaping scalar X into a one-element vector X+A
   1/X
601. Empty matrix X+A2
   0/X
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[1G;],1((1+pY)*X),[1](2G)+Y
604. Filling X with last element of X to length Y X+A1; Y+I0
   Y*X,Yp-1+X
605. Input of row Y of text matrix X X+C2; Y+I0
   X[Y;]-((1+pX)+1)*0,X
606. First ones in groups of ones X+Y
   X>((-pX)+1)+1+0,X
607. Inserting X into Y after index G X+A1; Y+I1; G+I0
   (G+Y),X,G+Y
608. Pairwise differences of successive columns (inverse of \) X=D
   X-((-pX)+1)+0,X
609. Leftmost neighboring elements X+D
   ((-pX)+1)+1+0,X
610. Rightmost neighboring elements X+D
   ((-pX)+1)+1+0,X
611. Shifting vector X right with Y without rotate X+A1; Y+I0
   (-pX)+(-Y)+1+X
612. Shifting vector X left with Y without rotate X+A1; Y+I0
   (pX)+Y+X
613. Drop of Y first rows from matrix X X+A2; Y+I0
   (2+Y)+X
614. Test if numeric X-A
   0e1+0pX
615. Reshaping non-empty lower-rank array X into a matrix X+A; 2>ppX
   (~2+1,1,pX)+pX
616. Giving a character default value for input X<C0
   1+t0,X
617. Adding scalar Y to last element of X X+D; Y+D0
   X+(-pX)+Y
618. Number of rows in matrix X X+A2
   1+t0pX
619. Number of columns in matrix X X+A2
   -1+t0pX
620. Ending points for X fields of width Y X+I0; Y+I0
   (X*Y)p(-Y)+1
621. Starting points for X fields of width Y X+I0; Y+I0
   (X*Y)pY+1
622. Zero or space depending on the type of X (fill element) X+A
   1+0pX
623. Forming first row of a matrix to be expanded X+A1
   1 80p800pX
624. Vector of length Y with X ones on the left, the rest zeroes X+I0; Y+I0
   Y:Xp1
625. Justifying text X to right edge of field of width Y X+I0; X+I1
   (-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 = \begin{cases} \begin{array}{l}
Y = (\mathit{c} \circ \mathit{d}) \circ X + 0, & \text{if } \mathit{Y} \leq \mathit{X} \\
X \cdot \mathit{I} + 0, & \text{otherwise}
\end{array}
\end{cases}

632. Ascending series of integers \(X, Y\) (for small \(X\) and \(Y\)) \(X \cdot \mathit{I} + 0; Y \cdot \mathit{I} + 0 \)
\(Y - \mathit{I} + 0, X\)
633. First ones in groups of ones \(X = B\)
\(X > \mathit{I} + 0, X\)
634. Last ones in groups of ones \(X = B\)
\(X > I, X\)
635. List of names in \(X\) (one per row) \(X = C\)
\(X < I, X\)
636. Selection of \(X\) or \(Y\) depending on condition \(G\)
\(X = A; Y = A; G = B\)
\(\mathit{g} \circ X, Y\)
637. Restoring argument of cumulative sum (inverse of + \(I\)) \(X = D\)
\(X = \mathit{I} + 0, X\)
638. Drop of \(Y\) first rows from matrix \(X = A\)
\(Y = \mathit{I} + 0, X\)
639. Drop of \(Y\) first columns from matrix \(X = A\)
\(0, Y = \mathit{I} + 0, X\)
640. Number of rows in matrix \(X = A\)
\(-\mathit{I} + 0, X\)
641. Number of columns in matrix \(X = A\)
\(-\mathit{I} + 0, X\)
642. Conditional drop of \(Y\) elements from array \(X = A\)
\(Y = \mathit{I} + 1; G = B\)
\(\mathit{g} \circ Y \circ G, X\)
643. Conditional drop of last element of \(X = A\)
\(\mathit{g} \circ X\)

INDEX GENERATOR
644. Expansion vector with zero after indices \(X = A\)
\(Y = \mathit{I} + 1, X\)
645. Boolean vector of length \(Y\) with zeroes in locations \(X = I\)
\(Y = \mathit{I} + 0, X\)
646. Starting points for \(X\) in indices pointed by \(Y = A\)
\(Y = \mathit{I} + 1, X\)
647. Boolean vector of length \(Y\) with ones in locations \(X = I\)
\(Y = \mathit{I} + 0, X\)
648. Check for input in range \(\mathit{I} \ldots X = A\)
\(Y = \mathit{I} + 0, X\)
649. Test if arrays are identical \(X = A\)
\(Y = \mathit{I} + 0, X\)
650. Zeroing elements of \(Y\) depending on their values \(X = D\)
\(Y = \mathit{I} + 0, X\)
651. Test if single or scalar \(X = A\)
\(\mathit{I} \in p, X\)
652. Test if vector \(X = A\)
\(\mathit{I} \in p, X\)
653. Test if \(X\) is an empty array \(X = A\)
\(\mathit{I} \in p, X\)

LOGICAL FUNCTIONS
654. Invoking a permutation \(X = I\)
\(A \wedge A \circ X = A \wedge A \circ \mathit{I} + 0, X\)
655. All axes of array \(X = A\)
\(\mathit{I} \circ X\)
656. All indices of vector \(X = A\)
\(\mathit{I} \circ X\)
657. Arithmetic progression of \(Y\) numbers from \(X\) with step \(G = D\)
\(Y = \mathit{I} + 0, X = D; Y = D; G = D \)
658. Consecutive integers from \(X\) to \(Y\) (arithmetic progression) \(X = I\)
\(Y = \mathit{I} + 0, X = D - \mathit{I} + 0; Y = D + I + Y - X\)
659. Empty numeric vector
\(\mathit{I} \cdot 0\)
660. Index origin (\(\mathit{DIO}\)) as a vector
\(\mathit{I} \cdot 1\)

661. Demote non-boolean representations to booleans \(X = B\)
\(0 \circ X\)
662. Test if \(X\) is within range \((Y[1], Y[2])\) \(X = D; Y = D + 1\)
(Y[1]<X)∧X<Y[2]
663. Test if X is within range [ Y[1],Y[2] ] X=D; Y=D1; 2=pY
(Y[1]<X)∧(X<Y[2])
664. Zeroing all boolean values X=B
0\X
665. Selection of elements of X and Y depending on condition G X=D; Y=D;
G=B
(XG)+Y×G
666. Changing an index origin dependent result to be as II0=1 X=I
(~II0)+X
667. Conditional change of elements of Y to one according to X Y=D; X=B
Y*=Y

COMPARISON <<>=
669. X implies Y X+B; Y+B
X\Y
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*0=X
674. Kronecker delta of X and Y (element of identity matrix) X=I; Y=I
Y=X

RABEL ,
675. Catenating Y elements G after every element of X X=A1; Y=I0; G=A
, X, ((pX),Y)ρG
676. Catenating Y elements G before every element of X X=A1; Y=I0; G=A0
, ( ((pX),Y)ρG ), X
677. Merging vectors X and Y alternately X=A1; Y=A1
, Y, [II0+.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
, ((pX),1)\Y^\*-1 i)\pX
681. Temporary ravel of X for indexing with G X=A; Y=A; G=I
X=ApX Δ X[g]\Y Δ X-., X Δ A\pX
682. Temporary ravel of X for indexing with G X=A; Y=A; G=I
X=\pX)\pA Δ A[g]\Y Δ A-., X
683. First column as a matrix X=A2
X[:,1]
684. Number of elements (also of a scalar) X=A
\p,X

CATENATE ,
685. Separating variable length lines X=A1; Y=A1
X, UTC[2], Y
686. XX identity matrix X=I0
(X,X)\p1, X=0
687. Array and its negative ('plus minus') X=D
X, [.5+\pX]-X
688. Underlining a string X=C1
X, [ II0 -.1]''
689. Forming a two-column matrix X=A1; Y=E A1
X, [1.1] Y
690. Forming a two-row matrix X=A1; Y=E A1
X, [,1] Y
691. Selection of X or Y depending on condition G X=A0; Y=A0; G=I0
(X,Y)[II0+G]
692. Increasing rank of Y to rank of X X=A; Y=A
(((\pX)\pY)\p1), \pY)\pY
693. Identity matrix of shape of matrix X X=D2
(\pX)\p1, 0\X
694. Reshaping vector X into a two-column matrix X=A1
   \((0.5\times\rho X, 2)\)ρX

696. Reshaping vector X into a one-row matrix X=A1
   \((1, \rho X)\)ρX

697. Reshaping vector X into a one-column matrix X=A1
   \(((\rho X), 1)\)ρX

698. Forming a Y-row matrix with all rows alike (X) X=A1; Y=I0
   \((Y, \rho X)\)ρX

699. Handling array X temporarily as a vector X=A
   \((\rho X)\rho \ldots , X\)

700. Joining sentences X=A; Y=A1
    Y, 0ρX

701. Entering from terminal data exceeding input (printing) width X=D
    X=0 2 1 2 5 8 0 4 5, 0

INDEXING [ ]

702. Value of fixed-degree polynomial Y at points X Y=D1; X=D

703. Number of columns in array X X=A
   \((\rho X)[\rho\rho X]\)

704. Number of rows in matrix X X=A2
   \((\rho X)[1]\)

705. Number of columns in matrix X X=A2
   \((\rho X)[2]\)

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×IIO]

708. Indexing with boolean value X (plotting a curve) X=B
    ' = '[IIO+X]

709. Indexing independent of index origin X=A1; Y=I
    X[IIO+Y]

710. Selection depending on index origin X=A1
    X[1]

711. Zeroing a vector (without change of size) X=D1
    X[1]=0

712. First column as a vector X=A2
    X[:1]

SHAPE \(\rho\)

713. Rank of array X X=A
    \(\rho\rho X\)

715. Duplicating vector X Y times X=A1; Y=I0
    \((Y\times\rho X)\rho X\)

716. Adding X to each row of Y X=D1; Y=D; \((\rho X)=\sim 1\times\rho Y\)
    Y+(\rho Y)\rho X

717. Array with shape of Y and X as its rows X=A1; Y=A
    \((\rho Y)\rho X\)

718. Number of rows in matrix X X=A2
    1\rho\rho X

RESHAPE \(\rho\)

720. Forming an initially empty array to be expanded
    0 80\rho 0

721. Output of an empty line X=A
    0\rho X

722. Reshaping first element of X into a scalar X=A
    \(\''0X\)

723. Corner element of a (non-empty) array X=A
    1\rho X

ARITHMETIC + - × ÷

724. Continued fraction
    1+2+3+4+5+6+7+8+9+10+11+12+\ldots

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; \(\rho X \leftrightarrow \rho Y\)
    X\(=\) 1+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 ∑IO=0 X+I
-∑IO-X
731. Changing an index origin dependent argument to act as ∑IO=1 X+I
(∑IO-1)+X
732. Output of assigned numeric value X+D
+X+
733. Changing an index origin dependent argument to act as ∑IO=0 X+I
∑IO+X
734. Selecting elements satisfying condition Y, others to one X+D; Y+B
X*Y

MISCELLANEOUS
736. Setting a constant with hyphens
ojLX¬□
737. Output of assigned value X+D
□<X+
738. Syntax error to stop execution
*
888. Meaning of life
ωσνκ|\¬+ðx¬!σφβ¬ρ♀♀,♀?10

Last updated 12.7.2002 by Olli Paavola