

Documentation for DM515 Tools

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Due to the 8 characters variable name length limitation on TI89T calculators, the function names of DM515 tools are not very descriptive. This document serves as a short guide for the functions and their intended usage.

All function names are prefixed with `s_`. To write underscore on TI89T, press the green diamond button and the MODE button.

1 Programs

1.0.1 Simplex-related

- `s_splex(M)`
`doSimplex(M)`
- `s_dual(A,b,z,x)`
`findDualFromPrimal(A,b,z,x)`
- `s_gomory(M)`
as `s_splex`, just with Gomory cuts

1.0.2 Network-related

- `s_plabel(n,u,s,t)`
`pushRelabel(n,u,s,t)`
- `s_decomp(n,x)`
`decompose(n,x)`

2 Functions

2.1 Functions for direct usage

2.1.1 Simplex-related

- `s_table(m, obj, conds)`
`toTableau(m, obj, conds)`

- **s_canon(T,basis)**
getCanonical(T,basis)
- **s_frows(A,rows)**
filterRows(A,rows)
- **s_fcols(A,cols)**
filterCols(A,cols)

2.1.2 Network-related

- **s_getmat()**
getMatrix
- **s_getres()**
getResMatrix
- **s_getbal()**
getBalance

2.2 Auxilliary functions

2.2.1 Simplex-related

- **s_lpi(l)**
getLargestPositiveIndex(l)
- **s_fni(l)**
getFirstNegativeIndex(l)
- **s_minrds(n,d,s)**
getMinimalRatioWithDenomSign(n,d,s)
- **s_gpivot(M)**
getPivot(M)
- **s_dpivot(M,p)**
doPivot(M,p)
- **s_inarr(str,arr)**
inArray(str,arr)
- **s_isvar(val)**
isVar(val)
- **s_fvar(e)**
findVars(e)
- **s_arrun(l)**
arrayUnique(l)

- **s_gvar(vars, e1)**
getVars(vars, e1)
- **s_gcons(vars, e1)**
getConst(vars, e1)
- **s_isola(e)**
isolate(e)
- **s_gomcut(T)**
addGomoryCut(T)
- **s_fsplit(a)**
fracSplit(a)

2.2.2 Network-related

- **s_fpi** findPositiveIndex
- **s_fpos** findPosition
- **s_dcstep** decomposeStep
- **s_hcycle** handleCycle
- **s_hpath** handlePath
- **s_gdist** getDist
- **s_fnic** findNegativeIndex
- **s_fladd** flowAdd