

HP-41C Matrix Simplex Programs LP by Philippe Roussel
PPC Calculator Journal Volume 9 No 1 P21 Jan-Feb 1982
The program requires PPC ROM in order to run properly

```
01 LBL "LP"      ;Linear Maximalization and Minimalization
02 CF 10
03 FS? 02
04 XEQ "TP"      ;Matrix Transformation Routine
05 RCL 07
06 DSE X
07 RCL 08
08 RCL 09
09 1
10 -
11 *
12 +
13 RCL X
14 E3
15 /
16 ST+ Z
17 +
18 RCL 08
19 1
20 -
21 E-3
22 *
23 ST+ Y
24 X<>Y
25 STO 12
26 LASTX
27 +
28 +
29 RCL 08
30 +
31 STO 14
32 STO 15
33 1
34 +
35 XROM 20,43 ;BC - PPC ROM Block Clear
36 X<>Y
37 RCL 08
38 E5
39 /
40 +
41 STO 10
42 RCL 08
43 +
44 STO 11
45 ISG 12
46 LBL 15
47 RCL 12
48 XROM 20,41 ;BX - PPC ROM Block Extrema
49 X<>Y
50 X<=0?
51 GTO 03
52 RCL M
53 INT
54 XROM 20,35 ;M4 - PPC ROM Matrix, Register Address to (i,j)
55 RCL 10
56 +
57 STO M
58 RCL 08
59 E3
60 /
61 +
62 STO N
63 RCL 11
64 STO O
65 CLX
66 LBL 01
```

```

67 RCL IND M
68 RCL IND O
69 X#0?
70 GTO 05
71 X#Y?
72 GTO 03
73 RDN
74 GTO 00
75 LBL 05
76 /
77 X<Y?
78 GTO 00
79 RCL M
80 STO 13
81 LBL 00
82 X<>Y
83 ISG M
84 "" ;F0 = null string (NOP)
85 ISG O
86 GTO 01
87 1
88 X<> IND 13
89 1/X
90 RCL 13
91 INT
92 XROM 20,35 ;M4 - PPC ROM Matrix, Register Address to (i,j)
93 RCL 14
94 +
95 RDN
96 FC? 02
97 ISG 15
98 STO IND T
99 STO 13
100 XROM 20,31 ;M2 - PPC ROM Matrix, Multiply by Constant
101 1
102 STO O
103 LBL 02
104 RCL O
105 RCL 13
106 X=Y?
107 GTO 00
108 0
109 X<> IND N
110 CHS
111 X#0?
112 XROM 20,32 ;M3 - PPC ROM Matrix, Add Multiple of Row to Another
113 LBL 00
114 ISG O
115 "" ;F0 = null string (NOP)
116 ISG N
117 GTO 02
118 GTO 15
119 LBL 03
120 -1
121 RCL 09
122 XROM 20,31 ;M2 - PPC ROM Matrix, Multiply by Constant
123 FC? 02
124 RCL 12
125 FS? 02
126 RCL 11
127 XROM 20,43 ;BC - PPC ROM Block Clear
128 RCL 14
129 1
130 +
131 STO 13
132 DSE 12
133 LBL 04
134 RCL IND 13
135 X=0?
136 GTO 00

```

```

137 RCL 08
138 XROM 20,36 ;M5 - PPC ROM Matrix, (i,j) to Register Address
139 RCL 13
140 RCL 14
141 -
142 RCL 12
143 +
144 RCL IND Y
145 X<> IND Y
146 STO IND Z
147 LBL 00
148 ISG 13
149 GTO 04
150 FS? 02
151 XEQ "TP" ;Matrix Transformation Routine
152 END

```

```

00E3C000F3004C50A90AAC021EF25450279773282911414240
90731B13439271402811411B1C13429272713C76404028403E
3F1140A52B71281B1543403A28403B960CCF0F2CA529717BB4
00907568A5232A409175281B13434091762B9177770290F590
F763B60079B40075B100064344B10090753D01719675F09677
B20011CE8D602D68A5232E4075AD02960F91F03DA51F119177
0390772D78B10010CEF65463A520019677F09676B300D0000F
041C1129A51FAD022CAC022BA52B2E11403D970C05908D67B1
0028A5242D2E412C4090F2CEF291F101960DB500AC021EF254
50C0000D66

```

227 BYTES

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Program Registers Needed: 33

Row 1 (1 - 4)



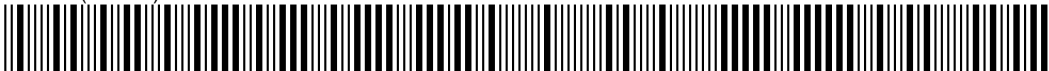
Row 2 (4 - 14)



Row 3 (14 - 23)



Row 4 (23 - 35)



Row 5 (35 - 45)



Row 6 (46 - 54)



Row 7 (54 - 63)



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Row 8 (64 - 72)



Row 9 (72 - 81)



Row 10 (82 - 90)



Row 11 (91 - 99)



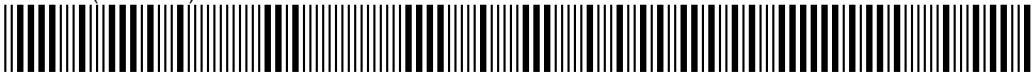
Row 12 (100 - 108)



Row 13 (109 - 117)



Row 14 (117 - 124)



Row 15 (125 - 134)



Row 16 (134 - 144)



Row 17 (144 - 151)



Row 18 (151 - 152)



HP-41C Matrix Simplex Programs TP by Philippe Roussel
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```
01 LBL "TP"      ;Matrix Transposition Routine
02 RCL 07
03 RCL 08
04 RCL 09
05 *
06 +
07 STO O
08 LASTX
09 2
10 -
11 STO N
12 RCL 07
13 1
14 +
15 STO M
16 R^
17 ENTER
18 DSE X
19 RCL 08
20 +
21 E3
22 /
23 +
24 XROM 20,43 ;BC - PPC ROM Block Clear
25 LBL 01
26 RCL O
27 RCL 09
28 R^
29 RCL 07
30 -
31 RCL 08
32 XROM 10,54 ;QR - PPC ROM Quotient Remainder
33 R^
34 STO O
35 X<>Y
36 +
37 LASTX
38 R^
39 *
40 4
41 X<> T
42 ST+ T
43 +
44 X<> IND Y
45 X<> d
46 FS? IND Z
47 GTO 03
48 SF 03
49 SF IND Z
50 X<> d
51 X<> IND Y
52 RCL 07
53 +
54 RCL M
55 X#Y?
56 GTO 02
57 1
58 +
59 STO M
60 X<>Y
61 GTO 00
62 LBL 03
63 X<> d
64 STO IND Y
65 RCL M
66 1
```

```
67 +  
68 STO M  
69 X<>Y  
70 GTO 01  
71 LBL 02  
72 RCL IND Y  
73 X<> IND Y  
74 STO IND Z  
75 RDN  
76 LBL 00  
77 DSE N  
78 GTO 01  
79 RCL 08  
80 X<> 09  
81 STO 08  
82 END
```

```
007BC000F30054502728294240917776124191762711409175  
7483977328401B134340A52B0290772974274128A2B6749177  
714076744214CE70927040CEF2CE7EACF1B400A803A8F1CE7E  
CEF22740907579B3001140917571B10004CE7E91F290751140  
917571B2000390F2CEF291F175019776B20028CE0938C0000D  
97
```

```
123 BYTES
```

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Program Registers Needed: 18

Row 1 (1 - 7)



Row 2 (8 - 18)



Row 3 (18 - 27)



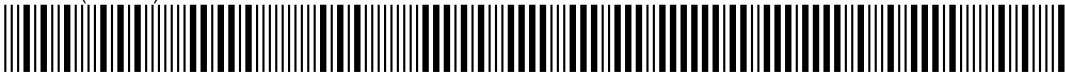
Row 4 (28 - 38)



Row 5 (39 - 46)



Row 6 (47 - 54)



Row 7 (54 - 63)



Row 8 (63 - 71)



Row 9 (72 - 79)



Row 10 (80 - 82)

