

HP-41C Complex Operations by Peter Ladrach  
PPC Calculator Journal V7 N4 P11 May 1980

```
01 LBL "CSTO" ;Complex Store
02 1
03 "CSTO ."
04 PROMPT
05 2
06 *
07 10
08 +
09 +
10 RCL 01
11 STO IND Y
12 RCL 00
13 STO IND L
14 GTO 00
15 LBL "CRCL" ;Complex Recall
16 1
17 "CRCL ."
18 PROMPT
19 2
20 *
21 10
22 +
23 +
24 RCL IND X
25 RCL IND L
26 FC?C 00
27 GTO 01
28 GTO 05
29 LBL "ENT" ;Complex Stack Enter
30 SF 05
31 RCL 01
32 RCL 00
33 GTO 01
34 LBL "IN" ;Enter Data to Complex X Register
35 CF 22
36 "IM=?"
37 FS? 01
38 "PHI=?"
39 ASTO Y
40 CLA
41 ARCL X
42 ">" " ;Append 2 spaces
43 ARCL Y
44 PROMPT
45 FC? 22
46 0
47 X<>Y
48 FC?C 00
49 GTO 01
50 GTO 05
51 LBL "CLSTX" ;Clear Complex Stack
52 RCL 09
53 RCL 08
54 GTO 01
55 LBL "CR^" ;Complex Roll Up
56 RCL 07
57 RCL 06
58 LBL 01
59 X<> 00
60 X<> 02
61 X<> 04
62 STO 06
63 X<>Y
64 X<> 01
65 X<> 03
66 X<> 05
67 STO 07
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68 GTO 00
69 LBL "CRDN" ;Complex Roll Down
70 RCL 01
71 RCL 00
72 LBL 02
73 X<> 06
74 X<> 04
75 X<> 02
76 STO 00
77 X<>Y
78 X<> 07
79 X<> 05
80 X<> 03
81 STO 01
82 GTO 00
83 LBL "CX<>Y" ;Complex Swap X and Y
84 RCL 00
85 X<> 02
86 STO 00
87 RCL 01
88 X<> 03
89 STO 01
90 GTO 00
91 LBL "CCLX" ;Complex Clear X Register
92 SF 05
93 0
94 STO 00
95 STO 01
96 GTO 00
97 LBL "CCHS" ;Complex Change Sign
98 RCL 01
99 RCL 00
100 FS? 01
101 P-R
102 CHS
103 X<>Y
104 CHS
105 X<>Y
106 GTO 04
107 LBL "CC" ;Complex Miscelaneous Function
108 XEQ 11
109 X<>Y
110 CHS
111 X<>Y
112 GTO 04
113 LBL "C/" ;Complex Division
114 SF 07
115 LBL "C*" ;Complex Multiplication
116 SF 06
117 GTO "C+" ;Complex Addition (Line 120)
118 LBL "C-" ;Complex Subtraction
119 SF 07
120 LBL "C+" ;Complex Addition
121 RCL 03
122 RCL 02
123 FS? 01
124 P-R
125 FS? 06
126 R-P
127 XEQ 11
128 FS? 06
129 R-P
130 X<>Y
131 FS? 07
132 CHS
133 ST+ T
134 RDN
135 FS?C 06
136 GTO 06
137 FS?C 07

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138 CHS
139 +
140 FS? 01
141 R-P
142 GTO 03
143 LBL 06
144 FS?C 07
145 1/X
146 *
147 FC? 01
148 P-R
149 LBL 03
150 STO 02
151 X<>Y
152 STO 03
153 RCL 07
154 RCL 06
155 GTO 02
156 LBL "CP-R" ;Complex Polar to Rectangular
157 RCL 01
158 RCL 00
159 P-R
160 GTO 05
161 LBL "CR-P" ;Complex Rectangular to Polar
162 RCL 01
163 RCL 00
164 R-P
165 GTO 05
166 LBL "C1/X" ;Complex Inversion (1/X)
167 -1
168 GTO 13
169 LBL "CSQRT" ;Complex Square Root
170 .5
171 GTO 13
172 LBL "CX^2" ;Complex X Squared
173 2
174 LBL 13
175 XEQ 11
176 R-P
177 RCL Z
178 ST* Z
179 Y^X
180 P-R
181 LBL 04
182 FS? 01
183 R-P
184 LBL 05
185 STO 00
186 X<>Y
187 STO 01
188 LBL 00
189 CLA
190 ARCL 00
191 >" " ;Append 2 spaces
192 ARCL 01
193 FS? 02
194 AVIEW
195 CF 00
196 FS?C 05
197 SF 00
198 RCL 01
199 RCL 00
200 RTN
201 LBL "CY^X" ;Complex Power Y^X
202 XEQ 11
203 R-P
204 RCL 03
205 RCL 02
206 FC? 01
207 R-P

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208 LN
209 R-P
210 X<>Y
211 ST+ T
212 RDN
213 *
214 P-R
215 E^X
216 FC? 01
217 P-R
218 XEQ 03
219 LBL 12
220 STOP
221 RCL 09
222 RCL 08
223 FS? 01
224 P-R
225 X<>Y
226 CHS
227 2
228 PI
229 *
230 ST* Z
231 *
232 E^X
233 RCL 01
234 RCL 00
235 FC? 01
236 R-P
237 X<>Y
238 ST+ T
239 RDN
240 *
241 P-R
242 XEQ 04
243 GTO 12
244 LBL "CE^X" ;Complex E^X
245 XEQ 11
246 E^X
247 P-R
248 GTO 04
249 LBL "CLN" ;Complex Natural Log
250 XEQ 11
251 R-P
252 LN
253 GTO 04
254 LBL "ARC" ;Inverse of SIN/COS/TAN
255 FC?C 03
256 SF 03
257 GTO 14
258 LBL "HYP" ;Hyperbolic SIN/COS/TAN
259 FC?C 04
260 SF 04
261 LBL 14
262 CLA
263 FS? 03
264 >"ARC "
265 FS? 04
266 >"HYP"
267 PROMPT
268 LBL "CSIN" ;Complex Sine
269 SF 06
270 LBL "CCOS" ;Complex Cosine
271 XEQ 11
272 FS?C 03
273 GTO 05
274 FS? 04
275 GTO 06
276 X<>Y
277 CHS

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```
278 LBL 06
279 E^X
280 ENTER
281 1/X
282 FS? 06
283 CHS
284 RCL Z
285 CHS
286 X<>Y
287 P-R
288 RDN
289 RDN
290 P-R
291 X<>Y
292 ST+ T
293 RDN
294 +
295 2
296 ST/ Z
297 /
298 FS?C 06
299 GTO 09
300 CF 04
301 GTO 04
302 LBL 05
303 FC? 04
304 FC? 06
305 GTO 07
306 CHS
307 STO 01
308 X<>Y
309 STO 00
310 LBL 07
311 R-P
312 2
313 ST* Z
314 Y^X
315 P-R
316 1
317 FC?C 06
318 CHS
319 +
320 R-P
321 SQRT
322 X<>Y
323 2
324 /
325 X<>Y
326 P-R
327 RCL 01
328 ST+ Z
329 RDN
330 RCL 00
331 +
332 R-P
333 LN
334 FS?C 04
335 GTO 04
336 X<>Y
337 CHS
338 GTO 04
339 LBL "CTAN" ;Complex Tangent
340 XEQ 11
341 FS? 04
342 GTO 08
343 X<>Y
344 CHS
345 LBL 08
346 FS? 03
347 GTO 10
```

348 2  
349 ST\* Z  
350 \*  
351 E^X  
352 P-R  
353 LBL 10  
354 1  
355 -  
356 X<>Y  
357 STO 00  
358 X<>Y  
359 R-P  
360 LASTX  
361 2  
362 +  
363 RCL 00  
364 X<>Y  
365 R-P  
366 X<>Y  
367 ST- T  
368 RDN  
369 /  
370 P-R  
371 FC?C 03  
372 GTO 09  
373 -1  
374 ST\* Z  
375 \*  
376 R-P  
377 LN  
378 -2  
379 ST/ Z  
380 /  
381 LBL 09  
382 FS?C 04  
383 GTO 04  
384 CHS  
385 X<>Y  
386 GTO 04  
387 LBL 11  
388 RCL 01  
389 STO 09  
390 RCL 00  
391 STO 08  
392 FS? 01  
393 P-R  
394 END

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767 BYTES

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Program Registers Needed: 110

Row 1 (1 - 3)



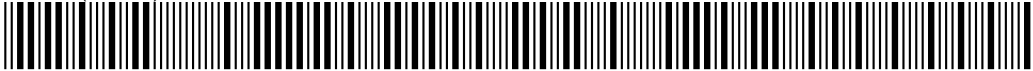
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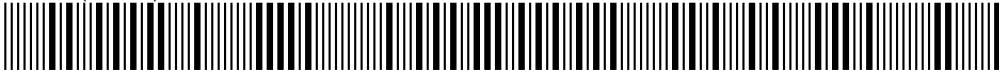
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Row 6 (29 - 34)



Row 7 (34 - 37)



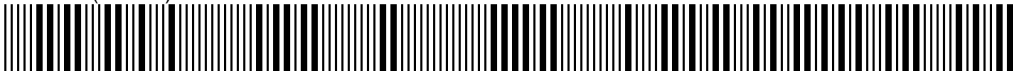
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Row 9 (42 - 49)



Row 10 (49 - 52)



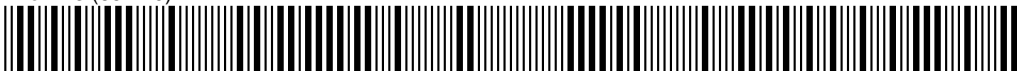
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Row 12 (59 - 66)



Row 13 (66 - 70)



Row 14 (71 - 79)



Row 15 (79 - 83)



Row 16 (83 - 91)





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Row 17 (91 - 96)



Row 18 (96 - 100)



Row 19 (101 - 107)



Row 20 (108 - 113)



Row 21 (113 - 117)



Row 22 (117 - 120)



Row 23 (120 - 127)



Row 24 (127 - 135)



Row 25 (136 - 144)



Row 26 (144 - 155)



Row 27 (155 - 160)



Row 28 (160 - 165)



Row 29 (165 - 168)



Row 30 (169 - 171)



Row 31 (172 - 175)



Row 32 (176 - 185)



Row 33 (186 - 193)

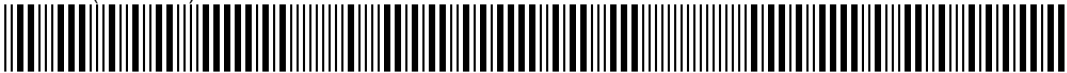


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Row 34 (193 - 201)



Row 35 (201 - 206)



Row 36 (206 - 216)



Row 37 (217 - 226)



Row 38 (227 - 237)



Row 39 (238 - 244)



Row 40 (244 - 249)



Row 41 (249 - 253)



Row 42 (254 - 257)



Row 43 (258 - 262)



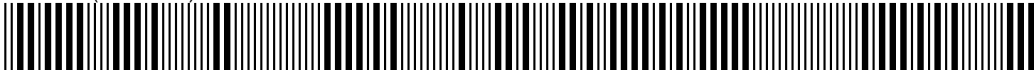
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Row 45 (266 - 269)



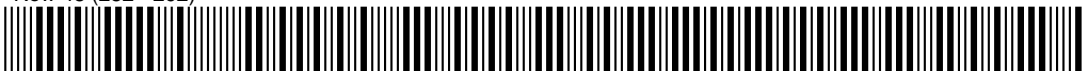
Row 46 (270 - 272)



Row 47 (273 - 282)



Row 48 (282 - 292)



Row 49 (293 - 301)



Row 50 (301 - 310)



# HP-41C Complex Operations by Peter Ladrach PPC V7 N4 P11 May 1980

Row 51 (311 - 321)



Row 52 (322 - 333)



Row 53 (334 - 339)



Row 54 (339 - 345)



Row 55 (346 - 355)



Row 56 (356 - 367)



Row 57 (368 - 376)



Row 58 (377 - 385)



Row 59 (386 - 394)

