HP-41C QUICK REFERENCE CARD FOR SYNTHETIC PROGRAMMING

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
8	DEG IND 00 128 ◆	RAD IND 01 129 ×	GRAD IND 02 130 ⁻¹	ENTER↑ IND 03 131 ←	STOP IND 04 132 α	RTN IND 05 133 ß	BEEP IND 06 134 Γ	CLA IND 07 135 ↓	ASHF IND 08 136 Δ	PSE IND 09 137 σ	CLRG IND 10 138 ◆	AOFF IND 11 139 √	AON IND 12 140 μ	OFF IND 13 141 ∠	PROMPT IND 14 142 ≻	ADV IND 15 143 ≤	8
9	RCL IND 16 144 θ	STO IND 17 145 Ω	ST+ IND 18 146 δ	ST− IND 19 147 ä	ST × IND 20 148 à	ST/ IND 21 149 ä	ISG IND 22 150 ä	DSE IND 23 151 ö	VIEW IND 24 152 ö	Σ REG IND 25 153 Ü	ASTO IND 26 154 ü	ARCL IND 27 155 Æ	FIX IND 28 156 æ	SCI IND 29 157 ≠	ENG IND 30 158 £	TONE IND 31 159 ▒	9
A	XR 0-3 IND 32 160	XR 4-7 IND 33 161 !	XR8-11 IND 34 162 "	X12-15 IND 35 163 #	X16-19 IND 36 164 $	X20-23 IND 37 165 %	X24-27 IND 38 166 &	X28-31 IND 39 167 '	SF IND 40 168 (	CF IND 41 169)	FS?C IND 42 170 *	FC?C IND 43 171 +	FS? IND 44 172 ,	FC? IND 45 173 −	GTO XEQ IND IND 46 174 .	SPARE IND 47 175 /	A
B	SPARE IND 48 176 0	GTO 00 IND 49 177 1	GTO 01 IND 50 178 2	GTO 02 IND 51 179 3	GTO 03 IND 52 180 4	GTO 04 IND 53 181 5	GTO 05 IND 54 182 6	GTO 06 IND 55 183 7	GTO 07 IND 56 184 8	GTO 08 IND 57 185 9	GTO 09 IND 58 186 :	GTO 10 IND 59 187 ;	GTO 11 IND 60 188 <	GTO 12 IND 61 189 =	GTO 13 IND 62 190 >	GTO 14 IND 63 191 ?	B
C	GLOBAL IND 64 192 @	GLOBAL IND 65 193 A	GLOBAL IND 66 194 B	GLOBAL IND 67 195 C	GLOBAL IND 68 196 D	GLOBAL IND 69 197 E	GLOBAL IND 70 198 F	GLOBAL IND 71 199 G	GLOBAL IND 72 200 H	GLOBAL IND 73 201 I	GLOBAL IND 74 202 J	GLOBAL IND 75 203 K	GLOBAL IND 76 204 L	GLOBAL IND 77 205 M	X<>-- IND 78 206 N	LBL -- IND 79 207 O	C
D	GTO -- IND 80 208 P	GTO -- IND 81 209 Q	GTO -- IND 82 210 R	GTO -- IND 83 211 S	GTO -- IND 84 212 T	GTO -- IND 85 213 U	GTO -- IND 86 214 V	GTO -- IND 87 215 W	GTO -- IND 88 216 X	GTO -- IND 89 217 Y	GTO -- IND 90 218 Z	GTO -- IND 91 219 [	GTO -- IND 92 220 \	GTO -- IND 93 221]	GTO -- IND 94 222 ↑	GTO -- IND 95 223 _	D
E	XEQ -- IND 96 224 ⁻¹	XEQ -- IND 97 225 a	XEQ -- IND 98 226 b	XEQ -- IND 99 227 c	XEQ -- IND100 228 d	XEQ -- IND101 229 e	XEQ -- IND102 230 f	XEQ -- IND103 231 g	XEQ -- IND104 232 h	XEQ -- IND105 233 i	XEQ -- IND106 234 j	XEQ -- IND107 235 k	XEQ -- IND108 236 l	XEQ -- IND109 237 m	XEQ -- IND110 238 n	XEQ -- IND111 239 o	E
F	TEXT 0 IND T 240 ⁻¹	TEXT 1 IND Z 241 q	TEXT 2 IND Y 242 r	TEXT 3 IND X 243 s	TEXT 4 IND L 244 t	TEXT 5 IND M 245 u	TEXT 6 IND N 246 v	TEXT 7 IND O 247 w	TEXT 8 IND P↑ 248 x	TEXT 9 IND Q_ 249 y	TEXT10 IND ⊢⁻¹ 250 z	TEXT11 IND a 251 ⁻¹	TEXT12 IND b 252 |	TEXT13 IND c 253 →	TEXT14 IND d 254 Σ	TEXT15 IND e 255 ⊢	F
	0 0000	1 0001	2 0010	3 0011	4 0100	5 0101	6 0110	7 0111	8 1000	9 1001	A 1010	B 1011	C 1100	D 1101	E 1110	F 1111	

For price information and a list of dealers in your area, send a self-addressed stamped envelope to: SYNTHETIX, 1540 Mathews Ave., Manhattan Beach, CA 90266, USA

Structure of multi-byte instructions

Two-byte instructions

STO 16 = 145,16 DSE IND 55 = 151,183
LBL e = 207,127 FS?C IND Y = 170,242
RCL b = 144,124 TONE 89 = 159,89
X<>M = 206,117 ST+ IND N = 146,246
LBL Q = 207,121 VIEW H(109) = 152,109

Two-byte special cases

GTO IND = 174,reg. XEQ IND = 174,128+r
GTO IND 09 = 174,9 XEQ IND X = 174,243
XROM i,j = 160+i/4,64(i mod 4)+j
WSTS = XROM 30,10 = 167,138
short form GTO = 177+label,0
GTO 12 = 189,0

Three-byte instructions

long form GTO = 208,0,label
GTO 32 = 208,0,32
XEQ = 224,0,label
XEQ D = 224,0,105
END = 192,0,9+sum of status indicators
32(.END.), 4(rePACK), 2(decompile)

Variable length instructions

TEXT = 240+n, n character bytes
Append symbol counts as first char.
⁻¹& = 241,38 ⁻¹⊢)? = 243,127,41,63
GTO ⁻¹ = 29,240+n, n character bytes
GTO ⁻¹XYZ = 29,243,88,89,90
XEQ ⁻¹ = 30,240+n, n character bytes
XEQ ⁻¹A = 30,241,65 (synthetic)
LBL ⁻¹ = 192,0,241+n, (key), n chars.
LBL ⁻¹: = 192,0,242,0,58 (synthetic)

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	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
	CAT	@c (GTO..)	DEL	COPY	CLP	R/S	SIZE	BST	SST	ON	PACK	←(PRGM)	USR/P/A	2 __	SHIFT	ASN	
0	NULL 00 – 0 ◆	LBL 00 01 ⊼ 1 ×	LBL 01 02 ▩ 2 ⊽	LBL 02 03 ▩ 3 ←	LBL 03 04 ⊼ 4 α	LBL 04 05 ⊼ 5 β	LBL 05 06 ⊤ 6 Γ	LBL 06 07 ▩ 7 ↓	LBL 07 08 ▩ 8 Δ	LBL 08 09 ▩ 9 σ	LBL 09 10 ▩ 10 ◆	LBL 10 11 ▩ 11 λ	LBL 11 12 μ 12 μ	LBL 12 13 ∠ 13 ∡	LBL 13 14 ▩ 14 τ	LBL 14 15 ▩ 15 Φ	0
1	0 16 ▩ 16 Θ	1 17 ▩ 17 Ω	2 18 ▩ 18 δ	3 19 ▩ 19 Á	4 20 ▩ 20 á	5 21 ▩ 21 Ä	6 22 ▩ 22 ä	7 23 ▩ 23 Ö	8 24 ▩ 24 ö	9 25 ▩ 25 Ü	. 26 ▩ 26 ü	EEX 27 ▩ 27 Æ	NEG 28 ▩ 28 œ	GTO T 29 ≠ 29 ≠	XEQ T 30 ▩ 30 £	W T 31 ▩ 31 ▒	1
2	RCL 00 32 32	RCL 01 33 ! 33 !	RCL 02 34 " 34 "	RCL 03 35 # 35 #	RCL 04 36 $ 36 $	RCL 05 37 % 37 %	RCL 06 38 & 38 &	RCL 07 39 ' 39 '	RCL 08 40 (40 (	RCL 09 41) 41)	RCL 10 42 * 42 *	RCL 11 43 + 43 +	RCL 12 44 , ⊣ 44 ,	RCL 13 45 - 45 —	RCL 14 46 . ⊢ 46 .	RCL 15 47 / 47 /	2
3	STO 00 48 0 48 0	STO 01 49 1 49 1	STO 02 50 2 50 2	STO 03 51 3 51 3	STO 04 52 4 52 4	STO 05 53 5 53 5	STO 06 54 6 54 6	STO 07 55 7 55 7	STO 08 56 8 56 8	STO 09 57 9 57 9	STO 10 58 : ▩ 58 :	STO 11 59 ; 59 ;	STO 12 60 < 60 <	STO 13 61 = 61 =	STO 14 62 > 62 >	STO 15 63 ? 63 ?	3
4	+ 64 @ 64 @	— 65 A 65 A	* 66 B 66 B	/ 67 C 67 C	X<Y? 68 D 68 D	X>Y? 69 E 69 E	X≤Y? 70 F 70 F	Σ+ 71 G 71 G	Σ− 72 H 72 H	HMS+ 73 I 73 I	HMS− 74 J 74 J	MOD 75 K 75 K	% 76 L 76 L	%CH 77 M 77 M	P→R 78 N 78 N	R→P 79 O 79 O	4
5	LN 80 P 80 P	X↑2 81 Q 81 Q	SQRT 82 R 82 R	Y↑X 83 S 83 S	CHS 84 T 84 T	E↑X 85 U 85 U	LOG 86 V 86 V	10↑X 87 W 87 W	E↑X-1 88 X 88 X	SIN 89 Y 89 Y	COS 90 Z 90 Z	TAN 91 [91 [	ASIN 92 \ 92 \	ACOS 93] 93]	ATAN 94 ↑ 94 ↑	→DEC 95 _ 95 _	5
6	1/X 96 ⊤ 96 ⊤	ABS 97 a 97 a	FACT 98 b 98 b	X≠0? 99 c 99 c	X>0? 100 d 100 d	LN1+X 101 e 101 e	X<0? A ▩ 102 f	X=0? B ▩ 103 g	INT C ▩ 104 h	FRC D ▩ 105 i	D→R E ▩ 106 j	R→D F ▩ 107 k	→HMS G ▩ 108 l	→HR H ▩ 109 m	RND I ▩ 110 n	→OCT J ▩ 111 o	6
7	CLΣ T ▩ 112 p	X<>Y Z ▩ 113 q	PI Y ▩ 114 r	CLST X ▩ 115 s	R↑ L ▩ 116 t	RDN M [▩ 117 u	LASTX N \ ▩ 118 v	CLX O] ▩ 119 w	X=Y? P ↑ ▩ 120 x	X≠Y? Q _ ▩ 121 y	SIGN ⊢ T ▩ 122 z	X≤0? a ▩ 123 π	MEAN b ▩ 124 |	SDEV c ▩ 125 →	AVIEW d Σ 126 Σ	CLD e ⊢ 127 ⊢	7
	0 0000	1 0001	2 0010	3 0011	4 0100	5 0101	6 0110	7 0111	8 1000	9 1001	A 1010	B 1011	C 1100	D 1101	E 1110	F 1111	
	00 01 02 03	04 05 06 07	08 09 10 11	12 13 14 15	16 17 18 19	20 21 22 23	24 25 26 27	28 29 30 31	32 33 34 35	36 37 38 39	40 41 42 43	44 45 46 47	48 49 50 51	52 53 54 55	← bit numbers in a 7-byte register		

FLAGS (Register d)

00-10 general purpose
11 auto execute
12 doublewide
13 lower case
14 overwrite
15-16 IL printer
- 0 0 MAN
- 0 1 NORM
- 1 0 TRACE
- 1 1 TR/STACK

17 record incomplete
18 ⎤ general use
19 ⎥ cleared at
20 ⎦ turn-on
21 prtr enable
22 num. entry
23 alpha entry
24 range ignore
25 error ignore
26 audio enable
27 USER mode
28 dec./comma
29 digit grouping
30 CAT
31 timer DMY/MDY
32 manual IL I/O
33 IL absolute manual
34 not used
35 not used
36-39 number of digits
40-41 display
- 0 0 SCI
- 0 1 ENG
- 1 0 FIX
- 1 1 FIX/ENG

42-43 trig mode
- 0 0 DEG
- 0 1 RAD
- 1 0 GRAD
- 1 1 RAD

44 cont. ON
45 system data entry
46 partial key sequence
47 SHIFT
48 ALPHA
49 low BAT
50 message
51 SST
52 PGRM
53 I/O
54 PSE
55 printer existence