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BASIC MCS 8080 GATES/ALLEN/DAVIDOFF MACRO 47(113) 03112 10-SEP-75 PAGE 21-8
F3 MAC 6-SEP-64 03111 FORMULA EVALUATION CODE

4894 005744* 001000 000321
4895 005745* 001000 000315
4896 005746* 000000 000000
4897 005747* 000000 005741*
4898 005750* 001000 000315
4899 005751* 000000 005726*
4900 005752* 000000 005746*
4901
4902 005753* 001000 000041
4903 005754* 000000 000672*
4904 005755* 000000 005751*
4905 005756* 001000 000672*
4906 005757* 000000 001544*
4907 005760* 000000 005754*
4908 005761* 001000 000007
4909
4910 005762* 001000 000305
4911 005763* 001000 000117
4912 005764* 001000 000006
4913 005765* 000000 000000
4914 005766* 001000 000011
4915 005767* 001000 000301
4916 005770* 001000 000176
4917 005771* 001000 000043
4918 005772* 001000 000146
4919 005773* 001000 0000157
4920 005774* 001000 000351
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4923
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4927 005775* 001000 000305
4928 005776* 001000 000315
4929 005777* 000000 005731*
4930 000000* 000000 005757*
4931 000001* 001000 000361
4932 000002* 001000 000062
4933 000003* 000000 001545*
4934 000004* 000000 005777*
4935
4936 000005* 001000 000376
4937 000006* 000000 000004
4938
4939 000007* 001000 000312
4940 000010* 000000 005743*
4941 000011* 000000 000003*
4942
4943 000012* 001000 000341
4944 000013* 001000 000042
4945 000014* 000000 001037*
4946 000015* 000000 000010*

005600 CALL MOVFR ;INTO THE FAC
005660 SETDBL: CALL FRCDL ;MAKE SURE THE LEFT OPERAND IS
005680
005700 LXI H,DBL0SP ;DOUBLE PRECISION
;DISPATCH TO A DOUBLE PRECISION ROUTINE
005720 DDOSP: LUI OPRTYP ;RECALL WHICH OPERAND IT WAS
005740
005760 RLC ;CREATE A DISPATCH OFFSET, SINCE
;TABLE ADDRESSES ARE TWO BYTES
;SAVE (B,C) FOR SINGLE PRECISION
;DOUBLE BYTE OFFSET
;INTO (B,C)
005780
005800 DAD B ;CALCULATE LOCATION OF ROUTINE TO GO TO
;GET WACK (B,C) FOR SINGLE PRECISION
;GET THE ADDRESS
005820
005840 MOV A,M
005860 INX H
005880 MOV M,M
005900 PCHL L,A
;AND PERFORM THE OPERATION, RETURNING
;TO RETADP, EXCEPT FOR COMPARES WHICH
;RETURN TO DCMPP
005920
005940 ; THE FAC IS DOUBLE PRECISION AND THE STACK IS EITHER
; INTEGER OR SINGLE PRECISION AND MUST BE CONVERTED
005960
005980
006000
006020
006040
006060
006080
006100
006120
006140
006160
006180
006200
006220
006240
006260
006280
006300
;SAVE THE STACK VALUE TYPE
;MOVE THE FAC INTO ARG
;POP THE STACK VALUE TYPE INTO (A)
;PUT IT IN VALTYP FOR THE FORCE
;ROUTINE
;SEE IF ITS SINGLE, SO WE KNOW
;HOW TO POP THE VALUE OFF
;ITS SINGLE PRECISION
;DO A POPR / CALL MOVFR
;POP OFF THE INTEGER VALUE
;SAVE IT FOR CONVERSION

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BASIC MCS 8080 GATES/ALLEN/DAVIDOFF MACRO 47(113) 03112 10-SEP-75 PAGE 21-9
F3 MAC 6-SEP-64 03111 FORMULA EVALUATION CODE

4947 000010* 001000 000303
4948 000017* 000000 005750*
4949 000020* 000000 000014*
4950
4951
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4954 000021* 001000 000315
4955 000022* 000000 005554*
4956 000025* 000000 000017*
4957 000024* 001000 000301
4958 000025* 001000 000321
4959 000026* 001000 000041
4960 000027* 000000 000700*
4961 000030* 000000 000622*
4962
4963 000031* 001000 000303
4964 000032* 000000 005750*
4965 000033* 000000 000027*
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4970 000034* 001000 000341
4971 000035* 001000 000315
4972 000036* 000000 005557*
4973 000037* 000000 000632*
4974 000040* 001000 000315
4975 000041* 000000 000000*
4976 000042* 000000 000036*
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4978 000043* 001000 000315
4979 000044* 000000 003261*
4980 000045* 000000 000041*
4981 000046* 001000 000341
4982 000047* 001000 000042
4983 000050* 000000 001641*
4984 000051* 000000 000044*
4985 000052* 001000 000341
4986 000053* 001000 000042
4987 000054* 000000 001637*
4988 000055* 000000 000050*
4989 000056* 001000 000303
4990 000057* 000000 000626*
4991 000060* 000000 000054*
4992
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4994
4995
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4997
4998
4999
006320 JMP SETDBL ;SET IT UP
006340
006360
006380
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006900
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006940
;THIS IS THE CASE WHERE THE STACK IS SINGLE PRECISION
;AND THE FAC IS EITHER SINGLE PRECISION OR INTEGER
;
;CONVERT THE FAC IF NECESSARY
;PUT THE LEFT HAND OPERAND IN THE REGISTERS
;SETUP THE DISPATCH ADDRESS
;FOR THE SINGLE PRECISION OPERATOR ROUTINES
;DISPATCH
;THIS IS THE CASE WHERE THE FAC IS SINGLE PRECISION AND THE STACK
;IS AN INTEGER.
;
;FACNG: POP H
;CALL PUSHF ;POP OFF THE INTEGER ON THE STACK
;SAVE THE FAC ON THE STACK
;CALL CONSTH ;CONVERT (M,L) TO A SINGLE PRECISION
;NUMBER IN THE FAC
;PUT THE LEFT HAND OPERAND IN THE REGISTERS
;RESTORE THE FAC
;FROM THE STACK
;POP SHLD H
;FAC=1
;POP SHLD H
;FACLO
;JMP SNG00> ;PERFORM THE OPERATION
;EVAL: IFN LENGTH=2,<
;IFN STRING,<
;XRA A
;STA VALTYP> ;ASSUME THE VALUE WILL BE NUMERIC
;CHGET
;JC FIN ;IF NUMERIC, INTERPRET CONSTANT

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Formula Simulator

5000	000063	000000	000072				
5001	000064	000000	000073				
5002	000065	001000	000315	06960	CALL	ISLET	I VARIABLE NAME?
5003	000066	000000	000312				
5004	000067	000000	000063				
5005	000070	001000	000322	06980	JNC	ISVAR	I AN ALPHABETIC CHARACTER MEANS YES
5006	000071	000000	000164				
5007	000072	000000	000066				
5008	000073	001000	000376	07000	CPI	PLUSTK	I IGNORE "+"
5009	000074	000000	000250				
5010	000075	001000	000312	07020	JZ	EVAL	
5011	000076	000000	000061				
5012	000077	000000	000071				
5013	000100	001000	000376	07040	CPI	"."	I "." AS LEADING CHARACTER OF A
5014	000101	000000	000056				
5015				07060			
5016	000102	001000	000312	07080	JZ	FIN	I CONSTANT?
5017	000103	000000	000063				
5018	000104	000000	000076				
5019	000105	001000	000376	07100	CPI	MINUTK	I NEGATION?
5020	000106	000000	000251				
5021	000107	001000	000312	07120	JZ	DOMIN	
5022	000110	000000	000146				
5023	000111	000000	000103				
5024				07140	IFN	STRING,<	
5025	000112	001000	000376	07160	CPI	34	I STRING CONSTANT?
5026	000113	000000	000042				
5027	000114	001000	000312	07180	JZ	STRLTI>	I IF SO BUILD A DESCRIPTOR IN A TEMPORARY
5028	000115	000000	000740				
5029	000116	000000	000110				
5030				07200			I DESCRIPTOR LOCATION AND PUT A POINTER TO THE
5031				07220			I DESCRIPTOR IN FACLO.
5032				07240	IFN	LENGTH,<	
5033	000117	001000	000376	07260	CPI	NOTTK	I CHECK FOR "NOT" OPERATOR
5034	000120	000000	000246				
5035	000121	001000	000312	07280	JZ	NOTER>	
5036	000122	000000	000412				
5037	000123	000000	000115				
5038				07300	IFN	FUNCTS,<	
5039	000124	001000	000376	07320	CPI	FNTK	I USER-DEFINED FUNCTION?
5040	000125	000000	000243				
5041	000126	001000	000312	07340	JZ	FNDER>	
5042	000127	000000	000744				
5043	000130	000000	000122				
5044	000131	001000	000326	07360	SUI	ONEFUN	I IS IT A FUNCTION NAME?
5045	000132	000000	000262				
5046	000133	001000	000322	07380	JNC	ISFUN	I FUNCTIONS ARE THE HIGHEST
5047	000134	000000	000204				
5048	000135	000000	000127				
5049				07400			I NUMBERED CHARACTERS ALLOWED
5050				07420			I SO THERE IS NO NEED TO CHECK
5051				07440			I THE UPPER BOUND
5052	000136	001000	000317	07460	PARCHK: SYNCHK	"("	I ONLY POSSIBILITY LEFT

5053	000137	000000	000050				
5054				07480			I IS A FORMULA IN PARENTHESES
5055	000140	001000	000315	07500	CALL	FRMEVL	I RECURSIVELY EVALUATE THE FORMULA
5056	000141	000000	000336				
5057	000142	000000	000154				
5058	000143	001000	000317	07520	SYNCHK	"")	
5059	000144	000000	000051				
5060	000145	001000	000311	07540	RET		
5061	000146			07560	DOMIN: IF	EXTFNC,<	
5062				07580	CALL	EVAL>	
5063				07600	IFN	EXTFNC,<	I NO " " OPERATOR IN THIS CASE
5064				07620	CALL	EVAL>	
5065	000146	001000	000026	07640	IFN	MVI 0,125	I A PRECEDENCE BELOW "
5066	000147	000000	000175				
5067				07660			I BUT ABOVE ALL ELSE
5068	000150	001000	000315	07680	CALL	LPOPER	I SO " GREATER THAN UNARY MINUS
5069	000151	000000	000341				
5070	000152	000000	000141				
5071	000153	001000	000052	07700	LHLD	TEMP2>	I GET TEXT POINTER
5072	000154	000000	000105				
5073	000155	000000	000151				
5074	000156	001000	000345	07720	PUSH	H	
5075				07740	IF	LENGTH=2,<	
5076	000157	001000	000315	07760	CALL	VNEG>	
5077	000160	000000	000000				
5078	000161	000000	000154				
5079				07780	IFN	LENGTH=2,<	
5080				07800	CALL	NEG>	
5081	000162			07820	LABCK:		I NEGATE THE FAC,
5082				07840			I FUNCTIONS THAT DON'T RETURN
5083				07860	IFN	LENGTH=2,<	I STRING VALUES COME BACK HERE
5084				07880	IFN	STRING,<	
5085				07900	CALL	CHKNUM>	
5086	000162	001000	000341	07920	POP	H	
5087	000163	001000	000311	07940	RET		
5088	000164	001000	000315	07960	ISVAR: CALL	PTRGET	I GET A POINTER TO THE
5089	000165	000000	000505				
5090	000166	000000	000166				
5091				07980			I VARIABLE IN [0,E]
5092	000167	001000	000345	08000	PUSH	H	
5093				08020	IF	STRING,<	I SAVE THE TEXT POINTER
5094				08040	XCHG		
5095				08060			I TRANSFER THE POINTER AT THE VALUE
5096				08080	MOVFM>		I INTO [H,L]
5097				08100	CALL	MOVFM>	I SETUP FAC WITH VARIABLE VALUE
5098	000170	001000	000353	08120	IFN	STRING,<	
5099				08140	XCHG		I PUT THE POINTER TO THE VARIABLE VALUE
5100				08160			I INTO [H,L], IN THE CASE OF A STRING
5101				08180			I THIS IS A POINTER TO A DESCRIPTOR AND NOT
5102	000171	001000	000042	08200	SHLD	FACLO	I AN ACTUAL VALUE
5103	000172	000000	000163				I IN CASE IT'S STRING STORE THE POINTER
5104	000173	000000	000165				
5105				08220			I TO THE DESCRIPTOR IN FACLO,

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5106 006174* 001000 000315 00240 IFE LENGTH=2,<
5107 006175* 000000 006307 00250 CALL GETYPE ;FOR STRINGS WE JUST LEAVE
5109 006176* 000000 006172*
5110 006177* 001000 000304 00280 CNZ VMOVFM ;A POINTER IN THE FAC
5111 006200* 000000 000000*
5112 006201* 000000 006175*
5113
5114
5115
5116
5117 006202* 001000 000341 00300 IFN LENGTH=2,<
5118 006203* 001000 000311 00320 LDA VALTYP
5119 006204* 001000 000000 00340 ORA A
5120 006205* 000000 000000 00360 CZ MOVFM> ;IF NOT,ACTUALLY TRANSFER THE VALUE INTO
;THE FAC USING (M,L) AS THE POINTER,
;RESTORE THE TEXT POINTER
5121 006205* 000000 000000
5122 006206* 001000 000007 00400 ISFUN: MVI B,0
5123 006207* 001000 000117 00440 RLC
5124 006210* 001000 000305 00460 MOV C,A
5125 006211* 001000 000327 00480 PUSH B
5126 006212* 001000 000171 00500 CHRGCT
5127 006213* 001000 000376 00520 IFN STRING,<
5128 006214* 000000 000051 00540 MOV A,C
5129 006215* 000000 000051 00560 NUMGFN:=2*LASUM+2*ONEFUN+1
5130 006216* 000000 000051 00600 CPI NUMGFN ;IS IT PAST LASUM?
5131 006217* 000000 006251*
5132 006218* 000000 006200*
5133 006219* 000000 006200*
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5153 006220* 001000 000317 00640 ; MOST FUNCTIONS TAKE A SINGLE ARGUMENT,
5154 006221* 000000 000050 00660 ; THE RETURN ADDRESS OF THESE FUNCTIONS IS A SMALL ROUTINE
5155
5156 006222* 001000 000315 00700 ; THAT CHECKS TO MAKE SURE VALTYP IS 0 (NUMERIC) AND POPS OFF
5157 006223* 000000 005336* 00720 ; THE TEXT POINTER, SO NORMAL FUNCTIONS THAT RETURN STRING RESULTS (I,E, CHR$)
5158 006224* 000000 006216* 00740 ; MUST POP OFF THE RETURN ADDRESS OF LABCK, AND POP OFF THE
; TEXT POINTER AND THEN RETURN TO FRMVL,
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5159 006225* 001000 000317 00800 SYNCHK 44 ;TWO ARGS SO COMMA MUST DELIMIT
5160 006226* 000000 000054 00840 ;MAKE SURE THE FIRST ONE WAS STRING
5161 006227* 001000 000315 00900 CALL CHKSTR
5162 006230* 000000 004164*
5163 006231* 000000 006223*
5164 006232* 001000 000353 00920 XCHG ;[D,E]<=>[I]PTR
5165 006233* 001000 000052 00940 LHL D ;GET PTR AT STRING DESCRIPTOR
5166 006234* 000000 006137*
5167 006235* 000000 006230*
5168 006236* 001000 000343 00960 XTHL ;GET FUNCTION #
5169 006237* 001000 000345 00980 PUSH H ;SAVE THE STRING PTR
5170 006240* 001000 000353 00990 ;PUT THE FUNCTION # ON
5171 006241* 001000 000315 00920 XCHG ;[M,L]<=>[I]PTR
5172 006242* 000000 011620* 00940 CALL GETBYT ;[E]<=>VALUE OF FORMULA
5173 006243* 000000 006234*
5174 006244* 001000 000353 00960 XCHG ;TEXT POINTER INTO [D,E]
5175 006245* 001000 000343 00980 XTHL ;[M,L]<=>VALUE OF SECOND ARGUMENT
5176 006246* 001000 000303 00990 ;SAVE INT VALUE OF SECOND ARG
5177 006247* 000000 006276* 00920 JMP FINGD ;[M,L]<=>FUNCTION NUMBER
5178 006248* 000000 000000 00930 ;DISPATCH TO FUNCTION
5179 006249* 001000 000303 00940
5180 006250* 000000 006276*
5181 006251* 001000 000315 00950 OKNORM: CALL PARCHK ;MAKE SURE ITS THERE,
5182 006252* 000000 006136*
5183 006253* 000000 006247*
5184 006254* 001000 000343 00960 ;READ THE FORMULA INSIDE
5185 006255* 000000 000000 00980 ;AND MAKE SURE ITS FOLLOWED BY ")"
5186 006256* 001000 000343 00940 XTHL ;[M,L]<=>FUNCTION # AND SAVE TEXT POINTER
5187 006257* 000000 000000 00960 IFN LENGTH=2,<
5188 006258* 000000 000000 00980 ; CHECK IF SPECIAL COERCION MUST BE DONE FOR ONE OF THE TRANSCENDENTAL
5189 006259* 000000 000000 00990 ; FUNCTIONS (RND, SQ, COS, SIN, TAN, ATN, LOG, AND EXP)
5190 006260* 000000 000000 00920 ;
5191 006261* 001000 000175 00940 MOV A,L ;[A]<=>FUNCTION NUMBER
5192 006262* 000000 000000 00950 BOTCON==<SQRTK-ONEFUN>*2
5193 006263* 001000 000376 00960 CPI BOTCON ;LESS THAN SQUARE ROOT?
5194 006264* 000000 000016 00950 JC NUTFRF ;DON'T FORCE THE ARGUMENT
5195 006265* 001000 000332 00990 JC NUTFRF
5196 006266* 000000 006272*
5197 006267* 000000 006252*
5198 006268* 000000 000000 00950 TOPCON==<ATNK-ONEFUN>*2+1
5199 006269* 001000 000376 00960 CPI TOPCON ;BIGGER THAN ARC-TANGENT?
5200 006270* 000000 000000 00980 PUSH H ;SAVE THE FUNCTION NUMBER
5201 006271* 001000 000334 00940 CC FRCSNG ;IF NOT, FORCE FAC TO SINGLE-PRECISION
5202 006272* 000000 006262*
5203 006273* 000000 006261*
5204 006274* 001000 000341 00960 NUTFRF: POP H ;RESTORE THE FUNCTION NUMBER
5205 006275* 000000 000000 00980 LXI D,LABCK ;RETURN ADDRESS
5206 006276* 001000 000021 00970
5207 006277* 000000 006162*
5208 006278* 000000 006267*
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FORMULA EVALUATION

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5212 006275' 001000 000325      09720      PUSH      D      ;MAKE THEN REALLY COME BACK
5213 006276' 001000 000001      09740      FINGO: LXI      B,FUNDSP ;FUNCTION DISPATCH TABLE
5214 006277' 000000 000103'      09820      RET>
5215 006300' 000000 006275'      09760      DAD       B      ;ADD ON THE OFFSET
5216 006301' 001000 000011      09780      IFB      LENGTH,<
5217                                09800      PUSHM
5218                                09820      RET>
5219                                09840      IFN      LENGTH,<      ;GO TO THE ADDRESS POINTED TO BY [H,L]
5220                                09860      MOV       C,M
5221 006302' 001000 000116      09880      INX       H
5222 006303' 001000 000043      09900      MOV       M,M
5223 006304' 001000 000146      09920      MOV       L,C
5224 006305' 001000 000151      09940      PCHL>      ;GO PERFORM THE FUNCTION
5225 006306' 001000 000351      09960      IFB      LENGTH=2,<
5226                                09980      ;
5227                                10000      ; GET THE VALTY AND SET CONDITION CODES AS FOLLOWS:
5228                                10020      ; CONDITION CODE      TRUE SET      FALSE SET
5229                                10030      ;
5230                                10040      ; SIGN      INT#2      STR,SNG,DBL
5231                                10060      ; ZERO      STR#3      INT,SNG,DBL
5232                                10080      ; ODD PARITY      SNG#4      INT,STR,SNG
5233                                10100      ; NO CARRY      OBL#10      INT,STR,SNG
5234                                10120      ;
5235                                10140      GETYPE: LOA      VALTYP      ;GET THE VALTYP
5236 006307' 001000 000072      10160      CPI      8      ;SET CARRY CORRECTLY
5237 006310' 000000 001543'      10180      DCR      A
5238 006311' 000000 006277'      10200      DCR      A
5239 006312' 001000 000376      10220      DCR      A
5240 006313' 000000 000010      10240      RET>
5241 006314' 001000 000075      10260      IFN      LENGTH=2,<
5242 006315' 001000 000075      10300      IFN      LENGTH,<
5243 006316' 001000 000075      10320      ORI      XWD      "01000","0366      ;"ORI", FLAG AS "OK"
5244 006317' 001000 000311      10340      AND      XWA      A      ;AND USE COMMON "AND" CODE
5245                                10360      ANDCON:      ;FLAG AS "AND"
5246                                10380      ANDCON:
5247                                10400      PUSH      PSW
5248                                10420      IFN      STRING,<CALL      CHKNUM>
5249                                10440      CALL      DEINT
5250                                10460      POP       PSW
5251                                10480      XCHG
5252                                10500      POP       B
5253                                10520      XTHL
5254                                10540      XCHG
5255                                10560      CALL      MOVFR
5256                                10580      PUSH      PSW
5257                                10600      CALL      DEINT
5258                                10620      POP       PSW
5259                                10640      ;
5260                                10660      ;
5261                                10680      ;
5262                                10700      ;
5263                                10720      ;
5264                                10740      ;

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5265                                10660      POP       B      ;OF FIRST ARG AND CHECK SIZE
5266                                10680      MOV       A,C      ;[B,C]=INT VALUE OF SECOND ARG
5267                                10700      LXI      M,GIVACF ;[A]=LOW OF SECOND ARG
5268                                10720      JNZ      ORFIN ;SETUP JUMP ADDRESS
5269                                10740      ANA      E      ;IT WAS "OR" SO FINISH UP
5270                                10760      MOV       C,A      ;AND TWO LOW ORDERS
5271                                10780      MOV       C,A      ;SAVE ANSWER IN [C]
5272                                10800      MOV       A,B      ;[A]=HIGH ORDER SECOND ARG
5273                                10820      ANA      D      ;[A]=HIGH ORDER OF ANSWER
5274                                10840      PCHL      ;FLOAT [A,C] AS ANSWER
5275                                10860      ORFIN: ORA      E      ;FOR TWO LOW ORDERS
5276                                10880      MOV       C,A      ;SAVE ANSWER LOW ORDER IN [C]
5277                                10900      MOV       A,B      ;[A]=HIGH ORDER SECOND ARG
5278                                10920      ORA      D      ;FOR TWO HIGH ORDERS
5279                                10940      MOV       C,A      ;[A]=HIGH ORDER OF ANSWER
5280                                10960      PCHL      ;FLOAT [A,C] AS ANSWER
5281                                10980      FINREL: LXI      H,PTOURL ;MAKE [H,L] POINT AT OPERATOR ADDRESS
5282                                11000      IFN      STRING,<
5283                                11020      LOA      VALTYP      ;STORE VALUE TYPE AS LOW
5284                                11040      RAR
5285                                11060      MOV       A,D      ;GET RELATIONAL MEMORIES IN [A]
5286                                11080      RAL
5287                                11100      MOV       E,A>      ;MOVE CARRY BIT IN
5288                                11120      IFB      STRING,<MOV      E,D>      ;KEEP THIS BYTE IN [E]
5289                                11140      MVI      D,100      ;PRECEDENCE OF ALL RELATIONAL
5290                                11160      MOV       A,B      ;OPERATORS IS 100
5291                                11180      CMP      D      ;[A]=PRECEDENCE OF OLD OPERATOR
5292                                11200      RNC      ;SEE WHETHER TO APPLY OLD OPERATOR
5293                                11220      JMP      DOPREC ;IF OLD OPERATOR HAS EQUAL OR GREATER
5294                                11240      ;PRECEDENCE THAN IT MUST BE APPLIED
5295                                11260      ;SEE IF TIME TO APPLY
5296                                11280      ;AND IF NOT SAVE INFO ON THE STACK
5297                                11300      ;
5298                                11320      PTOURL: ADR(DOURL) ;ADDRESS OF RELATIONAL
5299                                11340      ;OPERATOR APPLICATION
5300                                11360      ;ROUTINE
5301                                11380      ;
5302                                11400      ; TIME TO PERFORM A RELATIONAL OPERATOR
5303                                11420      ; [C] CONTAINS THE BITS AS TO WHICH RELATIONAL
5304                                11440      ; OPERATOR IT WAS (IF STRINGS ON
5305                                11460      ; LOW ORDER BIT SAYS WHETHER IT WAS STRING OR NOT)
5306                                11480      ;
5307                                11500      DOURL: MOV      A,C      ;GET MEMORIES INTO [A]
5308                                11520      IFN      STRING,<
5309                                11540      ORA      A
5310                                11560      RAR>      ;CARRY=WHETHER WAS STRING OR NOT
5311                                11580      POPM
5312                                11600      PUSH      PSW
5313                                11620      IFB      STRING,<
5314                                11640      CALL      FCOMP>      ;DO A NUMERIC COMPARE
5315                                11660      IFN      STRING,<
5316                                11680      CALL      CHKVAL
5317                                11700      ;SEE IF VALTYP MATCHES
5318                                ;CARRY AND SET ZERO IN THE

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Formula Evaluation