

G99 GJS

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(DEFFPROP INCR
(LAMBDA (L) (LIST (QUOTE SETQ) (CADR L) (LIST (QUOTE ADD1) (CADR L))))
MACRO)

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001      (DEFPROP COMPILE
002          (LAMBDA (L)
003              (PROG (DATA)
004                  (SETQ
005                      DATA
006                      (MAPCAR (FUNCTION (LAMBDA (J)
007                          (COND ((SETQ DATA
008                              (GETL J (QUOTE (EXPR FEXPR)))
009                              (COM2 J (CAR DATA) (CADR DATA))))))
010
011                      L))
012                      (DOC TV)
013                      (RETURN DATA))))
014
015      FEXPR)
016
017      (DEFPROP CMP
018          (LAMBDA (X) (PROG NIL
019              (PUTPROP (QUOTE TRY) (CAR X) (QUOTE EXPR))
020
021              FEXPR)))
022
023      (DEFPROP COM2
024          (LAMBDA (NAME FLAG EXP)
025              (PROG (LOUT SCNT SPVARS LOCVARS CNT LSUBRF)
026                  (COND ((EQ FLAG (QUOTE EXPR)) (SETQ FLAG (QUOTE SUBR)))
027                      ((EQ FLAG (QUOTE FEXPR))
028                          (SETQ FLAG (QUOTE FSUBR)))
029
030                      (SETQ EXP (P1A EXP))
031                      (SETQ DATA NIL)
032                      (SETQ LOUT (LIST (QUOTE LAP) NAME FLAG))
033                      (SETQ SCNT CNT)
034                      (PHASE2 EXP)
035                      (OUTPUT (OUTPUT NIL))
036                      (TERPRI)
037                      (TERPRI)
038                      (TYO 14)
039                      (COND ((NOT (EQUAL CNT SCNT)) (PRINTTY (LIST SCNT CNT)))
040
041                      (RETURN NAME)))
042
043      (DEFPROP CMP1
044          (LAMBDA NIL
045              (PROG (X FL DATA)
046                  A (COND ((EQ T (SETQ DATA (READ))) (RETURN T))
047                      ((AND (EQ (CAR DATA) (QUOTE DEFPROP))
048                          (SETQ X (ASSOC (SETQ FL (CADDR DATA))
049
050                          (QUOTE ((EXPR . *EXPR)
051
052                          (FEXPR . *FEXPR)))))))
053
054                      (PUTPROP (CADR DATA) T (CDR X))
055                      (COM2 (SETQ X (CADR DATA)) FL (CADDR DATA))
056
057                      (PRINTTY X))
058
059                      ((AND (EQ (CAR DATA) (QUOTE DEFPROP))
060                          (EQ (CADDR DATA) (QUOTE MACRO))))
061
062                          (EVAL DATA)
063
064                          (PRINT DATA))
065
066                          (T (PRINT DATA)))
067
068                      (GO A)))
069
070                      EXPRESSION)
071
072                      (QUOTE (SPECIAL UNSPECIAL)))
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001 (DEFPROP INIT
002 (LAMBDA NIL (SPECIAL SPVARS
003 MACROS
004 SPFL
005 LOCVARS
006 CLIST
007 EFFS
008 NACS
009 LDLST
010 SPLDLST
011 LO
012 HI
013 NO
014 ARGNO
015 BVARS
016 DATA
017 RSL
018 RSSL
019 PRSSL
020 CTAG
021 VGO
022 VGOL
023 EXIT
024 EXITN
025 PVR
026 LOUT
027 LIS
028 END
029 G2
030 SFLG
031 SLOTLIST
032 CNT
033 GL
034 PVRL
035 PROGSW
036 IVAR
037 LSUBRF
038 VL
039 RNL
040 P1SCNT
041 P1STCNT
042 P1LL
043 HLAC P1SCV))
044 EXPR)
045
046 (DEFPROP FREEZE
047 (LAMBDA (X)
048 (PROG (Z)
049 (SETQ Z SLOTLIST)
050 LP (COND ((NULL Z) (RETURN NIL))
051 ((EQ X (CAAR Z))
052 (COND ((NULL (CDAR Z)) (RPLACA Z (CONS X CNT)))
053 ((EQ (CDAR Z) (QUOTE DUP))
054 (RPLACA Z NIL))))
055 (SETQ Z (CDR Z))
056 (GO LP)))
057 EXPR)

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001      (DEFPROP CWORD
002          (LAMBDA NIL (PROG (K)
003              (SETQ K 0)
004                  A (COND ((EQ K NACS) (RETURN NIL)))
005                  (CPUSH (SETQ K (ADD1 K)))
006                  (GO A)))
007          EXPR))
008
009      (DEFPROP COMP1 (LAMBDA (X ARGNO) (COMP X)) EXPR)
010
011      (DEFPROP COMP (LAMBDA (X) (COMPW X NIL)) EXPR)
012
013      (DEFPROP COMPE (LAMBDA (X) (REMOVE (COMPW X T))) EXPR)
014
015      (DEFPROP COMPW
016          (LAMBDA (X EFFS)
017              (PROG (Y)
018                  (COND ((ATOM X) (GO A))
019                      ((AND (ATOM (CAR X)) (GET (CAR X) (QUOTE OPEN)))
020                          (SETQ X (LIST (CONS (SETQ Y (GENSYM))
021                              (CONS (CAR X)
022                                  (COMP (CADR X)))))))
023
024                          (SETQ SPLDLST (NCONC SPLDLST X))
025                          (SETQ Y (LIST Y))
026                          (GO B))
027                          (T (SETQ Y (COMPFLNC (CAR X) (CDR X) ARGNO))
028                              (GO B)))
029                  A (SETQ Y (CONS X (SETQ CNT (ADD1 CNT))))
030                  (COND ((SPECIALP X)
031                      (SETQ SPLDLST (NCONC SPLDLST (LIST Y)))))
032
033                  B (SETQ LDLST (CONS Y LDLST))
034                  (RETURN Y)))
035          EXPR))
036
037      (DEFPROP NACS (NIL + 5) VALUE)
038
039      (DEFPROP NACS1 (LAMBDA NIL (CDDDDR SLOTLIST)) EXPR)
040
041      (DEFPROP LOAD
042          (LAMBDA (X) (PROG (L HLAC)
043              (SETQ HLAC (SETQ L (LENGTH X)))
044                  A (COND ((ZEROP L) (RETURN NIL)))
045                  (LOAD1 L (CAR X))
046                  (SETQ X (CDR X))
047                  (SETQ L (SUB1 L))
048                  (GO A)))
049          EXPR))
050
051      (DEFPROP P1BUG
052          (LAMBDA (LO HI PTR)
053              (MAPC (FUNCTION (LAMBDA (X) (COND ((GREATERP (CDR X) LO)
054
055                  (RPLACD X HI))))))
056          PTR)))
057      EXPR)

```

001 (DEFPROP CLRACS
002 (LAMBDA NIL (PROG (Z)
003 (SETQ Z NACS)
004 (CSPLD)
005 A (COND ((ZEROP Z) (RETURN NIL)))
006 (CPUSH Z)
007 (CONT Z NIL)
008 (SETQ Z (SUB1 Z))
009 (GO A)))
010 EXPR)
011
012 (DEFPROP OPUSH
013 (LAMBDA (L) (PROG NIL (OUT1 (QUOTE PJSH) (QUOTE P) L) (SPUSH)))
014 EXPR)
015
016 (DEFPROP OPUSHS
017 (LAMBDA (L)
018 (PROG NIL (DPUSH (LIST (QUOTE SPECIAL) L)) (CONT 0 (LIST L))))
019 EXPR)
020
021 (DEFPROP OPOP (LAMBDA (L) (PROG2 (OUT1 (QUOTE POP) (QUOTE P) L) (SPOP))) EXPR)
022
023 (DEFPROP LOCATE
024 (LAMBDA (X AC)
025 (PROG (Z)
026 (SETQ Z (LOC X))
027 A (COND ((NOT (NUMBERP Z)) NIL)
028 ((GREATERP Z 0) (REMOVE X) (CPUSH Z) (RETURN Z)))
029 (LOAD1 (SETQ Z AC) X)
030 (GO A)))
031 EXPR)

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001 (DEFPROP RESTORE
002   (LAMBDA (X)
003     (PROG (C V R TEM)
004       ((COND ((NULL X) (RETURN NIL))
005          ((GREATERP (LENGTH X) (LENGTH SLOTLIST))
006            (PRINTTY (LIST X SLOTLIST))
007            (BARF RESTORE LOSSAGE)))
008          A1 (SETQ C 0)
009          A (COND ((EQUAL (LENGTH X) (LENGTH SLOTLIST)) (RETURN (R1 C)))
010            ((DVP (SETQ R (CADR (NACS1))) (GO CPP)))
011            (SETQ C (ADD1 C))
012            (SPOP)
013            (GO A)
014            CPP (R1 C)
015            CPP1 (SETQ V (CDDDDR (CDR X)))
016            (SETQ C NACS)
017            CPP3 (COND
018              ((NULL V) (DPOP (SETQ V (FREAD)) (CONT V R) (GO A1)))
019              ((AND (CAR V)
020                (EQ (CAAR V) (CAR R))
021                (NOT (DVP (CONTENTS (SETQ TEM
022                  (PLUS (MINUS C)
023                    NACS
024                    (LENGTH X)
025                    (MINUS (LENGTH SLOTLIST))))))))
026                  (GO CPP2)))
027                  (SETQ C (ADD1 C))
028                  (SETQ V (CDR V))
029                  (GO CPP3)
030                  CPP2 (CONT TEM R)
031                  (DPOP TEM)
032                  (GO A1)))
033 EXPR)
034
035 (DEFPROP R1
036   (LAMBDA (C) (COND ((NULL (ZEROP C))
037     (OUTPUT (LIST (QUOTE SUB)
038       (QUOTE P)
039       (LIST (QUOTE C) 0 0 C C)))))))
040 EXPR)
041
042 (DEFPROP BARF (LAMBDA (L) (PROG2 (PRINTTY L) (IOC G))) FEXPR)

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001 (DEFPROP DVP
 002 (LAMBDA (X)
 003 (PROG (Y)
 004 (RETURN (COND ((NULL X) NIL)
 005 ((EQ (CAR X) (QUOTE QUOTE)) NIL)
 006 ((EQ (CDR X) (QUOTE TAKEN)) T)
 007 ((EQ (CDR X) (QUOTE DUP)) NIL)
 008 ((AND (SPECIALP (CAR X)) (NOT (CDR X))) NIL)
 009 ((AND (SETQ Y (ASSOC (CAR X) LOCVARS))
 010 (NOT (CDR X))
 011 (LESSP CNT (CDR Y))))
 012 (T (PROG (Z)
 013 (SETQ Z LDLST)
 014 A (COND ((NULL Z)
 015 (RETURN (COND ((SETQ Z (ASSOC (CAR X) VL))
 016 (DVP (CONS (CDR Z)
 017 (CDR X))))
 018 (T NIL))))
 019 ((AND (EQ (CAAR Z) (CAR X))
 020 (EQUAL (LOC (COND ((NUMBERP (CDR X))
 021 X)
 022 (T (CONS (CAR X)
 023 CNT))))
 024 (SETQ Y (LOC (CAR Z))))
 025 Y)
 026 (RETURN T))
 027 (SETQ Z (CDR Z))
 028 (GO A))))))
 029 EXPR)
 030
 031 (DEFPROP COMSTO
 032 (LAMBDA (X Y) (PROG (TEM)
 033 (LOC (SETQ TEM (COMP (CADR Y))))
 034 (COND ((EQ X (QUOTE NSTORE))
 035 (LOAD1 1 TEM)
 036 (CPUSH 2)
 037 (CONT 2 NIL)
 038 (OUTPUT (QUOTE (PUSHJ P NUMVAL)))
 039 (CONT 1 (SETQ TEM (LIST (GENSYM))))
 040 (SETQ LDLST (CONS TEM LDLST))
 041))
 042 (COMPE (CAR Y))
 043 (OUT1 (QUOTE DPB) (LOCATE TEM 1) 2)
 044)) EXPR)
 045
 046 (DEFPROP COMPFUNC
 047 (LAMBDA (X Y ND)
 048 (PROG (TEM ARGNO Z FNARGS VALAC INST NARGS HOME T1 CAC FNLOC)
 049 (SETQ ARGNO ND)
 050 (SETQ VALAC 1)
 051 (COND ((AND (SETQ T1 (NOT (ATOM X)))
 052 (EQ (CDR X) (QUOTE SUBR)))
 053 (LOAD1 1 (COMP Y))
 054 (SETQ X (CAR X))
 055 (GO FX1))
 056 ((AND T1 (EQ (CAR X) (QUOTE LAMBDA)))
 057 (SETQ FNARGS T)
 058 (GO A))
 059 (T1 (SETQ FNARGS (COMP X)) (SETQ X NIL) (GO A))
 060 ((AND LSUBRF (EQ X (QUOTE ARG))))

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051 (COMARG (COMP (CAR Y))) PAGE 7.1
052 (GO RET2)
053 ((MEMBER X (QUOTE (AND OR NULL EQ))) (GO B00))
054 ((EQ X (QUOTE PROG2)))
055 (COMPE (CAR Y))
056 (SETQ T1 (COMP (CADR Y)))
057 (MAPC (FUNCTION COMPE) (CDDR Y))
058 (RETURN T1)
059 ((GET X (QUOTE *FEXPR)) (GO FX2))
060 ((MEMBER X (QUOTE (INSTORE STORE)))) (COMSTO X Y)
061 (GO RET2)
062
063 ((EQ X (QUOTE RETJRN)) (GO COMRET))
064 ((OR (GETL X (QUOTE (SUBR EXPR *EXPR))))
065 (COND ((OR (MEMBER X SPVARS)
066 (ASSOC X LOCVARS))
067 (SETQ FNARGS (COMP X))))))
068 (GO A))
069 ((EQ X (QUOTE COND)) (GO COMCOND))
070 ((EQ X (QUOTE PROG)) (GO COMPROG))
071 ((EQ X (QUOTE SETQ)) (GO COMSETQ))
072 ((EQ X (QUOTE QUOTE)) (RETURN (CONS X Y)))
073 ((EQ X (QUOTE GO)) (GO COMGO))
074 ((GET X (QUOTE LSUBR)) (GO COML))
075 ((NOT (GETL X (QUOTE (FSUBR FEXPR))))))
076 (PRINTTY (LIST X (QUOTE UNDEFINED)))
077 (PUTPROP X T (QUOTE *EXPR))
078 (GO A))
079
080 FX2 (CSPLD)
081 (LOAD1 1 (LIST (QUOTE QUOTE) Y))
082 FX1 (SETQ NARGS 1)
083 (SETQ CAC 17)
084 (GO H)
085 COML (COND ((AND (EQ X (QUOTE EVAL)) (NULL (CDR Y)))
086 (SETQ X (QUOTE *EVAL))
087 (GO A)))
088 (COMPLC X Y)
089 (GO RET)
090
091 COMCOND
092 (SETQ T1 (CAR Y))
093 CC1 (COND ((NULL T1) (GO CC2))
094 ((ASSOC (CAR T1) LDLST) (GO CC3)))
095 (SETQ T1 (CDR T1))
096 (GO CC1)
097 CC2 (CLEAR1)
098 (DOCOND (CDR Y) (SETQ VALAC NO))
099 (SETQ CNT (PLUS CNT 2))
100 (GO RET)
101 CC3 (SETQ Z (LOC (CONS (CAR T1) CNT)))
102 (COND ((NOT (NUMBERP Z)) (GO CC4))
103 ((NOT (DVP (CONTENTS Z)))
104 (CONT Z (CONS (CAR T1) CNT))
105 (GO CC1)))
106 CC4 (OPUSH Z)
107 CC5 (CONT 0 (CONS (CAR T1) CNT))
108 (GO CC6)
109 B00 (BOOL4 (CONS X Y))
110 RET2 (SETQ VALAC NO)
111 (GO RET1)
112 A (SETQ ARGNO 0)
113 A2 (COND ((NULL Y) (GO I)))
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121          (SETQ ARGNO (ADD1 ARGNO))
122          (SETQ Z (CONS (COMP (CAR Y)) Z))
123          (SETQ Y (CDR Y))
124          (GO A2)
125          T (COND ((EQ FNARGS T) (RETURN (P2LAM X Z)))
126                  ((MEMBER X (QUOTE (RPLACD RPLACA)))
127                   (ILOC1 (CADR Z) NO)
128                   (LOC (CAR Z))
129                   (REMOV5 (CADR Z))
130                   (REMOV5 (CAR Z))
131                   (CSPLD))
132                   (COND ((EQUAL (CAR Z) (QUOTE (QUOTE NIL)))
133                           (OUT1 (GET X (QUOTE INSTN))
134                           D
135                           (LOC (CADR Z)))
136                           (REMOVE (CAR Z)))
137                           (T (OUT1 (GET X (QUOTE INST))
138                               (LOCATE (CAR Z) (FRAC1))
139                               (LOC (CADR Z)))))
140                           (RETURN (CADR Z)))
141                           ((NOT (EQ X (QUOTE CONS))) (GO T1))
142                           ((EQUAL (CAR Z) (QUOTE (QUOTE NIL)))
143                            (REMOVE (CAR Z))
144                            (SETQ Z (CDR Z))
145                            (SETQ X (QUOTE NCONS)))
146                            T1 (SETQ NARGS (LENGTH Z))
147                            (COND ((AND (EQ NARGS 2)
148                                     (EQ (ILOC (CAR Z)) 1)
149                                     (SETQ TEM (GET X (QUOTE COMMU))))
150                                     (SETQ Z (REVERSE Z))
151                                     (SETQ X TEM)))
152                                     (COND ((SETQ TEM (GET X (QUOTE ACS)))
153                                           (SPLDLST (CSPLD3 Z)))
154                                           (LOAD Z)
155                                           (COND (TEM) (SPLDLST (CSPLD))))
156                                           H
157                                           H1 (COND ((AND FNARGS (GREATERP (LOC FNARGS) 0))
158                                                 (SETQ FNLOC (LOC FNARGS))
159                                                 (REMOVE FNARGS)))
160                                                 (SETQ ARGNO (COND ((GET X (QUOTE ACS)) (T 37)))
161                                                 (SETQ INST 0)
162                                                 LP2 (SETQ INST (ADD1 INST))
163                                                 (COND ((ZEROP ARGNO) (GO LP3))
164                                                 ((NOT (ZEROP (BOOLE 1 1 ARGNO)))
165                                                 (COND ((DVP (CONTENTS INST)) (CPUSH INST))
166                                                 (CONT INST NIL)))
167                                                 (SETQ ARGNO (LSH ARGNO -1))
168                                                 (GO LP2)
169                                                 LP3 (COND (FNARGS (OUT1 (QUOTE CALLF#)
170                                         NARGS
171                                         (COND (FNLOC) (T (LOC FNARGS))))
172                                         (REMOVE FNARGS))
173                                         (T (OUTPUT (LIST (QUOTE CALL)
174                                         (COND (CAC) (T NARGS)
175                                         (LIST (QUOTE E) X)))))))
176                                         RET
177                                         RET1 (RETURN (CAR (CONT VALAC (LIST (GENSYM))))))
178                                         COMSETO
179                                         (RETURN (CSETQ Y))
180                                         COMPROG

```

```

151 (SETQ TEM (LMB (CADDR Y) NIL)) PAGE 7.3
152 (SETQ SFLG NIL)
153 (COND ((EQUAL (CAR Y) (ADD1 CNT)) (CLEAR1)))
154 (CPROG Y TEM)
155 (GO RET2)
156 COMGO(CPVR1)
157 (COND ((ATOM (CAR Y))
158     (OUTJ (QUOTE JRST) 0 (ADR (CAR Y))))
159     (T (LOAD1 I (COMP (CAR Y)))
160         (OUTJ (QUOTE JRST) 0 VGO)))
161 (GO RET)
162 COMRET
163 (CRET Y)
164 (GO RET)))
165
166 EXPR)

167 (DEFFPROP COMPLC
168     (LAMBDA (X Y)
169         (PROG (NARGS HOME INST T1 T2)
170             (CLEAR1)
171             (SETQ NARGS (LENGTH Y))
172             (OPUSH (LIST (QUOTE C) 0 0 (SETQ T1 (GENSYM))))
173             COML1(CONT 0 (QUOTE (NIL . TAKEN)))
174             (COND ((NULL Y) (GO COML2)))
175             (SETQ HOME (APPEND SLOTLIST NIL))
176             (SETQ INST (COMP (CAR Y)))
177             (RESTORE HOME)
178             (OPUSH (LOC INST))
179             (REMOVE INST)
180             (SETQ Y (CDR Y))
181             (GO COML1))
182             COML2(SETQ T2 (LENGTH SLOTLIST))
183             (CWORLD)
184             (COND ((NOT (EQ (LENGTH SLOTLIST) T2)) (BARF LSLOSSAGE)))
185             (OUTPUT (LIST (QUOTE MDVNI) 6 NARGS))
186             (OUTPUT (LIST (QUOTE JCALL) 16 (LIST (QUOTE E) X)))
187             (OUTPUT T1)
188             COML3(SPOP)
189             (COND ((ZEROP NARGS) (CLRACS) (RETURN NIL)))
190             (SETQ NARGS (SUB1 NARGS))
191             (GO COML3)))
192
193 EXPR)

```

```

001 (DEFPROP P2LAM
002   (LAMBDA (X Y)
003     (PROG (SF TEM TL ACL)
004       (SETQ TEM (CADR X))
005       (SETQ Y (REVERSE Y))
006       A (COND ((NULL TEM) (GO B)))
007       (SETQ TL (ILOC1 (CAR Y) (FREAC)))
008       (REMOVE (CAR Y))
009       (COND ((SPECIALP (CAR TEM))
010         (SETQ SF T)
011         (COND ((OR (NOT (NUMBERP TL)) (LESSP TL 1))
012           (LOAD1 (SETQ TL (FREAC)) (CAR Y))))
013           ((OR (NOT (NUMBERP TL)) (DVP (CONTENTS TL)))
014             (DPUSH TL)
015             (SETQ TL 0)))
016             (CONT TL (CONS (CAR TEM) (QUOTE TAKEN)))
017             (SETQ ACL (CONS TL ACL))
018             (SETQ Y (CDR Y))
019             (SETQ TEM (CDR TEM))
020             (GO A)
021             B (COND (SF (OUTPUT (QUOTE (JSP 6 SPECBIND)))) (T (GO D)))
022               (SETQ TEM (CADR X))
023               C (COND ((NULL TEM) (GO D))
024                 ((SPECIALP (CAR TEM))
025                   (PROG (Z)
026                     (SETQ Z SLOTLIST)
027                     A (COND ((NJLL Z) (RETURN NIL))
028                       ((NJLL (CAR Z))
029                         ((AND (EQ (CAAR Z) (CAR TEM))
030                           (NULL (CDAR Z)))
031                           (RPLACA Z NIL)))
032                           (SETQ Z (CDR Z))
033                           (GO A)))
034                           (OUTPUT (LIST 0
035                             (ILOC (CONS (CAR TEM) CNT))
036                               (LIST (QUOTE SPECIAL) (CAR TEM))))))
037                               (SETQ TEM (CDR TEM))
038                               (GO C)
039                               D (COND ((NULL ACL) (GO E)))
040                               (RPLACD (CONTENTS (CAR ACL)) NIL)
041                               (SETQ ACL (CDR ACL))
042                               (GO D)
043                               E (SETQ TEM (COMP (CADDR X)))
044                               (COND (SF (OUTPUT (QUOTE (PUSHJ P SPECSTR)))))
045                                 (SETQ CNT (ADD1 CNT))
046                                 (RETURN TEM)))
047                               EXPR)
048
049 (DEFPROP CRET
050   (LAMBDA (Y) (PROG NIL
051     (CPVRL)
052     (SETQ ARGNO PVR)
053     (COND ((EQUAL Y (QUOTE (QUOTE NIL)))
054       (DUTJ (QUOTE JRST) 0 EXITN))
055       (T (LOAD1 PVR (COMP (CAR Y)))
056         (DUTJ (QUOTE JRST) 0 EXIT))))))
057   EXPR)
058
059 (DEFPROP CSETO
060   (LAMBDA (Y)

```

```

061 (PROG (FNARGS HOME Z TEM DATA) PAGE 8.1
062 (ILOC1 (SETQ Z (COMP (CADR Y))) NO)
063 (COND ((ASSOC (CAR Y) SPLDLST) (GO COMS1)))
064 COMS3( REMOVE Z)
065 (FREEZE (CAR Y))
066 (SETQ FNARGS (LOC Z))
067 (SETQ HOME
068 (COND ((SPECIALP (CAR Y)) T)
069 ((NOT (ILOC (SETQ TEM (CONS (CAR Y) CNT)))) NIL)
070 (T (NOT (DVP (CONTENTS (LOC TEM)))))))
071 (SETQ CNT (ADD1 CNT))
072 (COND ((AND EFFS (NOT HOME) (NOT (SPECIALP (CAR Y)))))
073 (COND ((AND (NUMBERP FNARGS)
074 (NOT (DVP (CONTENTS FNARGS))))
075 (CONT FNARGS (LIST (CAR Y)))
076 (RETURN NIL))
077 (T (OPUSH FNARGS)
078 (CONT 0 (LIST (CAR Y)))
079 (RETURN NIL))))
080 (COND ((AND HOME (EQUAL (CADR Y) (QUOTE (QUOTE NIL)))))
081 (SETQ TEM T)
082 (OUT1 (COND ((OR EFFS (DVP (CONTENTS NO)))
083 (SETQ TEM NIL)
084 (QUOTE CLEARM))
085 (T (QUOTE CLEARB)))
086 NO
087 (SETQ Z
088 (COND ((SPECIALP (CAR Y))
089 (LIST (QUOTE SPECIAL) (CAR Y)))
090 (T (ILOC (CONS (CAR Y)
091 (SUB1 CNT)))))))
092 (COND ((NUMBERP Z) (CONT Z (LIST (CAR Y)))))
093 (COND (TEM (CONT NO (CONS (CAR Y)
094 (COND ((NUMBERP Z)
095 (QUOTE DUP))
096 (T NIL)))))))
097 (GO COMPS3))
098 (COND ((OR (NOT (NUMBERP FNARGS)
099 (LESSP FNARGS 0)
100 (DVP (CONTENTS FNARGS)))
101 (LOAD1 (SETQ NO (COND (EFFS (FREAC)) (T NO))) Z)
102 (SETQ FNARGS NO)))
103 (CONT FNARGS (LIST (CAR Y)))
104 (COND ((SPECIALP (CAR Y))
105 (COND ((ZEROP FNARGS)
106 (OPOP (LIST (QUOTE SPECIAL) (CAR Y))))
107 (T (OUTPUT (LIST (QUOTE MOVEM)
108 FNARGS
109 (LIST (QUOTE SPECIAL)
110 (CAR Y)))))))
111
112 COMPS3
113 (COND (EFFS (RETURN NIL)))
114 (SETQ CNT (SUB1 CNT))
115 (RETURN (COMP (CAR Y)))
116 COMS1(OPUSH (SETQ DATA (CAR Y)))
117 (REMVL (FUNCTION (LAMBDA (L) (EQ DATA (CAR L))))
118 (QUOTE SPLDLST)))
119 (GO COMPS3))
120

```

```

121
122      (DEFFPROP CSPLD3
123          (LAMBDA (DATA)
124              (REMOVL (FUNCTION (LAMBDA (L) (COND ((AND (NOT (ATOM (CDR L)))
125                  (NOT (ASSOC (CAR L)
126                  DATA)))
127                      (CSFUN L 1)
128                      NIL)
129                      (T NIL))))))
130              (QUOTE SPLDLST)))
131          EXPR)
132
133      (DEFFPROP CSPLD1
134          (LAMBDA NIL (REMOVL (FUNCTION (LAMBDA (L)
135              (COND ((NOT (ATOM (CDR L))) NIL)
136                  (T (CSPVAR L) T)))))
137              (QUOTE SPLDLST)))
138          EXPR)
139
140      (DEFFPROP CSPLD2
141          (LAMBDA (DATA LD)
142              (PROG NIL (REMOVL (FUNCTION (LAMBDA (L)
143                  (COND ((NOT (ATOM (CDR L)))
144                      (CSFUN L DATA)
145                      LD)
146                      (T (CSPVAR L) T)))))
147              (QUOTE SPLDLST))))
148          EXPR)
149
150      (DEFFPROP CSFUN
151          (LAMBDA (L AC) (PROG (Y) (COND ((AND (SETQ Y (ASSOC (CAR L) LDLST))
152              (NOT (ILOC Y)))
153                  (CAR(CDR L AC))))))
154          EXPR)
155
156      (DEFFPROP CSPLD (LAMBDA NIL (CSPLD2 1 T)) EXPR)
157
158      (DEFFPROP CSPVAR
159          (LAMBDA (L) (PROG NIL (COND ((NOT (NUMBERP (ILOC (CONS (CAR L) CNT)))
160              (OPUSH (CAR L))
161              (CONT 0 (CONS (CAR L) CNT))))))
162          EXPR)
163
164      (DEFFPROP P1A
165          (LAMBDA (X)
166              (PROG (Z BVARS RNL LL P1SCNT P1STCNT P1SCV)
167                  (SETQ CNT 1)
168                  (SETQ LOCVARS (SETQ SPVARS NIL))
169                  (COND ((NULL (EQ (CAR X) (QUOTE LAMBDA))) (BARD ER2-1))
170                      ((AND (CADR X) (ATOM (CADR X)))
171                          (SETQ LSURRF T)
172                          (SETQ X (CONS (CAR X) QUOTE LAMBDA)
173                              (CONS (LIST (CADR X)) (CDDR X)))))
174                          (SETQ LL (P1LMB (SETQ Z (CADR X)))))
175                          (COND ((GREATERP (LENGTH Z) NACS) (BARD TMA)))
176                          (RETURN (LIST (CAR X) LL (P1 (CADR X)))))))
177          EXPR)

```

001 (DEFPROP P1LMB
002 (LAMBDA (Z)
003 (MAPCAR (FUNCTION (LAMBDA (J)
004 (PROG NIL
005 (COND ((GET J (QUOTE SPECIAL))
006 (SETQ SPVARS (ADD J SPVARS))
007 (GO A))
008 ((MEMBER J BVARS)
009 (SETQ RNL
010 (CONS (CONS J (SETQ J (GENSYM)))
011 RNL))))
012 (PLOC J 0)
013 A (SETQ BVARS (ADD J BVARS))
014 (RETURN J))))
015 Z))
016 EXPR)
017
018 (DEFPROP P1LAM
019 (LAMBDA (Z RNL)
020 (PROG (TEM LL)
021 (SETQ TEM (MAPCAR (FUNCTION P1) (CDR Z)))
022 (SETQ LL (P1LMB (CADAR Z)))
023 (SETQ CNT (ADD1 CNT))
024 (RETURN (CONS (LIST (QUOTE LAMBDA) LL (P1 (CADDR Z)))
025 TEM)))
026 EXPR)

```

001 (DEFPROP P1
002   (LAMBDA (X)
003     (PROG (Z Y TEM IVAR)
004       (COND ((ATOM X) (GO A))
005         ((ATOM (CAR X)) (GO B))
006         ((EQ (CAAR X) (QUOTE LAMBDA)) (RETURN (P1LAM X RNL)))
007         ((EQ (CAAR X) (QUOTE LABEL))
008           (RETURN (P1 (LIST (QUOTE PROG)
009             (LIST (CADAR X))
010             (LIST (QUOTE SETQ)
011               (CADAR X)
012               (P1 (LIST (QUOTE FUNCTION)
013                 (CADDAR X))))
014               (LIST (QUOTE RETURN)
015                 (CONS (CADAR X) (CDR X)))))))
016
017   A (COND ((OR (NUMBERP X) (MEMBER X (QUOTE (T NIL))))
018             (RETURN (LIST (QUOTE QUOTE) X)))
019             ((SETQ Z (ASSOC X RNL)) (RETURN (P1 (CDR Z))))
020             ((GET X (QUOTE SPECIAL)) (SETQ SPVARS (ADD X SPVARS)))
021             ((VARB X) (GO AA))
022             (T (PLOC X (ADD1 CNT))))
023
024   AA (SETQ CNT (ADD1 CNT))
025   (RETURN X)
026
027   B (COND ((SETQ Z (ASSOC (CAR X) RNL))
028             (RETURN (P1 (CONS (CDR Z) (CDR X)))))
029             ((SETQ Z (GET (CAR X) (QUOTE MACRO))) (RETURN (P1 (Z X))))
030             ((EQ (CAR X) (QUOTE SETQ)) (GO P1SETQ))
031             ((EQ (CAR X) (QUOTE LIST))
032               (RETURN (ITER (QUOTE CONS) (APPEND (CDR X) (LIST NIL)))))
033             ((AND (EQ (LENGTH (CDR X)) 2)
034                   (SETQ Z (ASSOC (CAR X) (QUOTE ((GREATERP . *GREAT)
035                     (LESSP . *LESS)
036                     (PLUS . *PLUS)
037
038                     (APPEND . *APPEND)
039                     (DIFFERENCE . *DIF)
040                     (TIMES . *TIMES)
041                     (QUOTIENT . *QUO)))))))
042
043             ((EQ (CAR X) (QUOTE NOT))
044               (SETQ X (CONS (QUOTE PROG) (P1PSTP))
045                 (RETURN (P1PROG (CDR X) RNL)))
046
047             ((EQ (CAR X) (QUOTE COND))
048               (GO P1COND))
049             ((AND (EQ (CAR X) (QUOTE ERRSET)) (NOT (ATOM (CADR X))))
050               (RETURN (CONS (CAR X)
051                 (CONS (LIST (GFY (LIST (QUOTE LAMBDA)
052                   NIL
053                   (CADR X))))
054
055                   (CDDR X))))))
056             ((EQ (CAR X) (QUOTE GO)) (P1PSTP) (RETURN X))
057             ((EQ (CAR X) (QUOTE RETURN)) (P1PSTP))
058             ((SETQ Z (ASSOC (CAR X) (QUOTE ((FUNCTION . QUOTE)
059               (*FUNCTION . *FUNCTION)))))))
060             (RETURN (LIST (CDR Z) (GFY (CADR X)))))
061
062             ((MEMBER (CAR X) (QUOTE (AND OR)))
063               (SETQ TEM LOCVARS)
064               (SETQ Y CNT)
065               (SETQ Z (MAPCAR (FUNCTION P1) (CDR X)))
066               (GO ADS)))

```

```

051 ((GETL (CAR X) (QUOTE (EXPR SUBR *EXPR)))) PAGE 10.1
052 ((MEMBER (CAR X) (QUOTE (STORE NSTORE))))
053 (SETQ Z (P1 (CADDR X)))
054 (RETURN (LIST (CAR X) (P1 (CADR X)) Z)))
055 ((GETL (CAR X) (QUOTE (FEXPR FSUBR *FEXPR))) (RETURN X))
056 ((OR (GET (CAR X) (QUOTE SPECIAL)) (MEMBER (CAR X) BVARS)))
057 (SETQ X (CONS (P1 (CAR X)) (CDR X))))
058 (SETQ Z (MAPCAR (FUNCTION P1) (CDR X))))
059 (COND ((AND (EQ (CAR X) (QUOTE EVAL))
060           (NOT (CDDR X))
061           (EQ (CAAR Z) (QUOTE CONS))
062           (EQ (CAADDR Z) (QUOTE QUOTE))
063           (GETL (SETQ TEM (CADADDR (CAR Z)))
064             (QUOTE (FEXPR FSUBR *FEXPR)))))
065           (RETURN (CONS (CONS TEM (QUOTE SUBR)) (CADDR Z))))))
066 C (RETURN (CONS (CAR X) Z))
067 P1SETQ
068   (VARB (SETQ Y (COND ((SETQ Z (ASSOC (CADR X) RNL)) (CDR Z))
069                         (T (CADR X)))))
070     (SETQ P1SCV (CONS Y P1SCV)))
071     (SETQ Z (P1 (CADDR X)))
072     (SETQ CNT (ADD1 CNT))
073     (RETURN (LIST (CAR X) Y Z)))
074 P1COND
075   (SETQ TEM LOCVARS)
076   (SETQ Y CNT)
077   (SETQ Z (P1CDC (CDR X)))
078 AOS (SETQ CNT (ADD1 CNT))
079   (P1BUG Y CNT TEM)
080   (SETQ CNT (ADD1 CNT))
081   (GO C))
082
083 EXPR)
084
085 (DEFPROP P1CDC
086   (LAMBDA (X) (PROG (P1SCV T1)
087     (SETQ T1
088       (MAPCAR (FUNCTION (LAMBDA (J)
089         (MAPCAR (FUNCTION P1)
090           J))))))
091
092           X))
093           (RETURN (CONS P1SCV T1))))
094
095 EXPR)
096
097 (DEFPROP GFY
098   (LAMBDA (X) (COND ((ATOM X) X) (T (COM2 (GENSYM) (QUOTE EXPR) X)))))
099
100 EXPR)
101
102 (DEFPROP P1PSTP (LAMBDA NIL (COND ((ZEROP P1SCNT) (SETQ P1SCNT P1STCNT)))) EXPR)

```

```

001      (DEFPROP P1PROG
002          (LAMBDA (X RNL)
003              (PROG (GL P1SCNT PR TEM P1LL P1STCNT)
004                  (SETQ P1LL (P1LMB (CAR X)))
005                  (SETQ TEM LOCVARS)
006                  (SETQ P1SCNT 0)
007                  (SETQ P1STCNT CNT)
008                  (SETQ
009                      PR
010                      (MAPCAR (FUNCTION (LAMBDA (Y)
011                          (PROG2 (SETQ P1STCNT (INCR CNT))
012                              (COND ((ATOM Y)
013                                  (P1PSTP)
014                                  (SETQ GL
015                                      (CONS (CONS Y (GENSYM))
016                                          GL))
017                                          Y)
018                                          (T (P1 Y)))))))
019
020                          (CDR X)))
021                          (SETQ CNT (ADD1 CNT))
022                          (COND ((NOT (ZEROP P1SCNT)) (P1BUG P1SCNT CNT TEM)))
023                          (REMOVL (FUNCTION (LAMBDA (X)
024                              (PROG (Z)
025                                  (RETURN (COND ((SETQ Z
026                                      (ASSOC X LOCVARS))
027                                      (ZEROP (CDR Z)))))))
028
029                          (QUOTE P1LL)))
030                          (SETQ CNT (ADD1 CNT))
031                          (RETURN (LIST (QUOTE PROG) P1SCNT GL P1LL PR)))))
032
033      EXPR) (DEFPROP OUTG
034          (LAMBDA (X) (PROG NIL
035              (OUTPUT (CAR X))
036              A (SETQ X (CDR X))
037              (COND ((NULL X)
038                  (RETURN (OUTPUT (QUOTE (PUSHJ P *UDT)))))))
039                  (OUTPUT (LIST (QUOTE CAIN) 1 (LIST (QUOTE QUOTE)
040                                  (CAAR X))))
041                  (OUTPUT (LIST (QUOTE JRST) 0 (CDAR X)))
042                  (GO A)))
043
044      EXPR) (DEFPROP CPROG
045          (LAMBDA (X PSFLG)
046              (PROG (GL EXIT EXITN PVR Z PRSSL PROGSW VGO VCL)
047                  (SETQ VCL (CAR X))
048                  (SETQ X (CDR X))
049                  (SETQ PROGSW T)
050                  (SETQ PVR NO)
051                  (SETQ EXIT (GENSYM))
052                  (SETQ EXITN (GENSYM))
053                  (SETQ VGO (GENSYM))
054                  (SETQ GL (CONS (CONS NIL EXIT)
055                                  (CONS (CONS NIL EXITN)
056                                      (CONS (CONS NIL VGO) (CAR X))))))
057
058          L1 (SETQ Z (CADR X))
059          ((COND ((NULL Z) (GO L2))
060              ((SPECIALP (CAR Z)))
061              (T (SETQ PVRL (CONS (CAR Z) PVRL)))))))

```

```

051                               (SETQ Z (CDR Z))
052                               (GO L1)
053                               L2  (SETQ X (CADDR X))
054                               L3 (COND ((AND (NOT PROGSW) (NOT (ZEROP VCL)))
055                               (NOT (EQ (LENGTH SLOTLIST) (LENGTH PRSSL))))
056                               (RESTORE PRSSL)))
057                               (COND ((NULL X) (GO L4)))
058                               ((EQUAL VCL (INCR CNT)) (CLEAR1)))
059                               (COND ((ATOM (CAR X)))
060                               (CLRACS)
061                               (CPVRL)
062                               (RESTORE PRSSL)
063                               (SETQ Z (ADR (CAR X)))
064                               (COND ((NOT (ATOM LOUT))
065                               (PUTPROP Z LOUT (QUOTE PREVI))))
066                               (OUTPUT Z))
067                               ((AND (NULL (CDR X)) (EQ (CAAR X) (QUOTE RETURN)))
068                               (COND ((OR (NULL (CDAR X)) (NULL (CADAR X)))
069                               (PUTPROP EXITN T (QUOTE USED)))
070                               (GO L4))
071                               (T (LOAD1 PVR (COMP (CADAR X)))
072                               (COND ((GET EXITN (QUOTE USED))
073                               (OUTJ (QUOTE JRST) 0 EXIT)
074                               (GO L4))
075                               (T (GO L5)))))
076                               (T (COMPE (CAR X))))
077                               (SETQ X (CDR X))
078                               (GO L3)
079                               L4  (DUTTAG EXITN)
080                               (COND ((OR (NOT (EQ (CAR LOUT) (QUOTE JRST)))
081                               (GET EXITN (QUOTE USED)))
082                               (OUTPUT (LIST (QUOTE MOVEI)
083                               PVR
084                               (QUOTE (QUOTE NIL)))))))
085                               L5  (DUTTAG EXIT)
086                               (COND (PSFLG (OUTPUT (QUOTE (PUSHJ P SPECSTR)))))
087                               (SETQ CNT (PLUS 2 CNT))
088                               (COND ((GET VGO (QUOTE USED))
089                               (SETQ VGOL (CONS (CONS VGO (CDDDR GL)) VGOL))))))
090                               EXPR)
091
092                               (DEFPROP CPVRL
093                               (LAMBDA NIL (PROG NIL
094                               (COND ((NOT PROGSW) (RETURN NIL)))
095                               (SETQ PROGSW NIL)
096                               L   (COND ((NULL PVRL) (SETQ PRSSL (APPEND SLOTLIST NIL))
097                               (RETURN NIL)))
098                               T4  (COND ((NOT (ILOC (CONS (CAR PVRL) CNT)))
099                               (INITZ (CAR PVRL)))
100                               (SETQ PVRL (CDR PVRL))
101                               (GO L)))
102                               EXPR)
103
104                               (DEFPROP INITZ
105                               (LAMBDA (X) (PROG NIL (OPUSH (QUOTE ((QUOTE NIL)))) (CONT 0 (LIST X))))
106                               EXPR))

```

```

001      (DEFPROP VARB
002          (LAMBDA (X) (PROG (Q)
003              (COND ((MEMBER X BVARSI) (RETURN NIL))
004                  ((GET X (QUOTE SPECIAL)) (GO A)))
005                  (PRINTTY (LIST X (QUOTE UNDECLARED)))
006                  (PUTPROP X T (QUOTE SPECIAL)))
007                  A (SETQ SPVARS (ADD X SPVARS))
008                  (SETQ BVARSI (ADD X BVARSI))
009                  (RETURN T)))
010          (RETURN T)))
011
012      (DEFPROP LOAD1
013          (LAMBDA (ACNO VAR)
014              (PROG (Z OLDAcc DATAORG DAC DOD)
015                  (REMOVE VAR)
016                  (SETQ Z (ILOC1 VAR ACNO))
017                  (SETQ OLDAcc (CONTENTS ACNO))
018                  (SETQ DATAORG
019                      (COND ((NOT (NUMBERP Z)) NIL) (T (CONTENTS Z))))
020                      (SETQ DAC (DVP OLDAcc))
021                      (SETQ DOD (DVP DATAORG))
022                      (COND ((EQ ACNO Z) (COND (DAC (CPUSH ACNO)))(RETURN NIL))
023                          ((AND (EQ Z 0) (NOT DOD) (NOT DAC)) (GO COMPOP))
024                          ((AND (NOT DOD)
025                              OLDAcc
026                              (NNUMBERP Z)
027                              (OR (LESSP Z 1)
028                                  (GREATERP Z HLAC)
029                                  (LESSP Z ACNO)))
030                              (GO EXCOMP))
031                          ((NOT DAC) (GO ADFREE))
032                          (T (GO PUSHAC)))
033
034                  EXCOMP
035                  (CONT Z OLDAcc)
036                  (OUT1 (QUOTE EXCH) ACNO Z)
037                  (GO T4)
038
039                  PUSHAC
040                  (CPUSH ACNO)
041                  (SETQ Z (LOC VAR))
042                  ADFREE
043                  (COND ((NOT (NUMBERP Z)) (GO T3)))
044                  (OUT1 (QUOTE MOVE) ACNO Z)
045                  (RETURN (CONT ACNO
046                      (COND ((NULL (CDR DATAORG))
047                          (CONS (CAR DATAORG) (QUOTE DUP)))))))
048                  COMPOP
049                  (OPOP ACNO)
050                  T4 (RETURN (CONT ACNO DATAORG))
051                  T3 (OUT1 (QUOTE MOVE) ACNO Z)
052                  (RETURN (CONT ACNO
053                      (COND ((EQ (CAAR Z) (QUOTE QUOTE)) (CAR Z))
054                          (T (LIST (CAR VAR)))))))
055
056      (DEFPROP LOC (LAMBDA (X) (ILOC1 X NIL)) EXPR)

```

```

001 (DEFPROP ILOC
002   (LAMBDA (X) (PROG (CNTR BEST BESTNO Y)
003     (SETQ Y SLOTLIST)
004     (SETQ CNTR 1)
005     A (COND ((NULL Y) (GO B))
006       ((AND (CAR Y) (EQ (CAAR Y) (CAR X))) (GO C)))
007       D (SETQ Y (CDR Y))
008       (SETQ CNTR (ADD1 CNTR))
009       (GO A))
010
011 TAKEIFN
012   (COND (BESTNO (GO D)))
013   (SETQ BESTNO 105105)
014   (GO TAKEL1)
015 TAKEL (SETQ BESTNO (CDAR Y))
016 TAKEL1
017   (SETQ BEST CNTR)
018   (GO D)
019   B (COND (BESTNO (GO RETVAL))
020     ((SPECIALP (CAR X))
021       (RETURN (LIST (QUOTE SPECIAL) (CAR X))))
022     ((EQ (CAR X) (QUOTE QUOTE)) (RETURN (LIST X))))
023     ((SETQ Y (ASSOCR (CAR X) VL))
024       (RETURN (ILOC (CONS (CAR Y) (CDR X)))))
025       (T (RETURN NIL)))
026     C (COND ((EQ (CAR X) (QUOTE QUOTE)) (GO QT))
027       ((OR (NULL (NUMBERP (CDAR Y))) (NULL (CDAR Y)))
028         (GO TAKEIFN))
029       ((AND (NOT (LESSP (CDAR Y) (CDR X)))
030         (OR (INJL BESTNO)
031           (GREATERP BESTNO (CDAR Y))))
032         (GO TAKEL)))
033         (T (GO D)))
034     QT (COND ((NULL (EQUAL X (CAR Y))) (GO D)))
035     TAKE (SETQ BEST CNTR)
036     RETVAL
037       (RETURN (COND ((NOT (GREATERP BEST NACS)) BEST)
038         (T (PLUS (MINUS BEST) NACS 1))))))
039
040 EXPR)
041 (DEFPROP ILOC1
042   (LAMBDA (X AC) (PROG (Z)
043     A (COND ((SETQ Z (ILOC X)) (RETURN Z))
044       ((MEMBER (CAR X) PVRL)
045         (RETURN (QUOTE ((QUOTE NIL))))))
046       ((SETQ Z (ASSOCR (CAR X) VL))
047         (RETURN (ILOC1 (CONS (CAR Z) (CDR X)) AC)))
048       ((SETQ Z (ASSOC (CAR X) SPLDLST))
049         (RETURN (CARCDR Z (COND ((NULL AC) (FREAC)
050           (T AC)))))))
051       (PRINTTY X)
052       (BARF DSI)))

```

```

001 (DEFPROP CARCDR
002   (LAMBDA (ITEM AC)
003     (PROG (T3 T4 T5)
004       (COND ((SETQ T5 (EQ (ILOC1 (SETQ T3 (CDDR ITEM)) AC) AC)) (REMOVE T3)))
005         (COND ((OR (NULL T5) (DVP (CONTENTS AC))) (CPUSH AC)))
006           (REMOVE T3)
007           (SETQ T4 (CSTEP (CADR ITEM) AC (ILOC T3)))
008           (REMOVE T3)
009           (COND ((NULL (CDR T4))
010             (SETQ VL (CONS (CONS (CAR (CONTENTS (CAR T4))) (CAR ITEM)) VL))
011             (RETURN (CAR T4))))
012             (SETQ T4 (REVERSE T4))
013             L1 (COND ((NULL (CDR T4)) (GO RET))
014               ((EQ (LENGTH T4) 2) (GO L2))
015               ((AND (EQ AC 1) (EQ (CAR T4) 1))
016                 (OUTPUT (LIST (QUOTE CALL)
017                   1
018                   (LIST (QUOTE E)
019                     (READLIST (CONS (QUOTE C)
020                       (NCONC (REVERSE (CDR T4))
021                         (QUOTE (R)))))))
022                           (GO RET)))
023             L2 (OUT1 (GET (CADR T4) (QUOTE INST)) AC (CAR T4))
024               (SETQ T4 (CONS AC (CDDR T4)))
025               (GO L1)
026               RET (CONT AC (LIST (CAR ITEM)))
027               (RETURN AC)))
028             EXPR)
029
030 (DEFPROP CSTEP
031   (LAMBDA (FUN AC LARGS)
032     (PROG (T2)
033       (RETURN (COND ((NULL FUN) (LIST LARGS))
034         ((SETQ T2 (COPT FUN LARGS)) (LIST T2))
035           (T (CONS (CAR (SETQ T2 (GET FUN
036             (QUOTE OPEN)))) (CSTEP (CDR T2) AC LARGS)))))))
037
038             EXPR)
039
040 (DEFPROP COPT
041   (LAMBDA (X Y) (PROG (TEM T1)
042     (SETQ TEM SPLDLST)
043     L (COND ((NULL TEM) (RETURN NIL))
044       ((ATOM (CDAR TEM)) (GO L1))
045         ((AND (EQ X (CADAR TEM))
046           (EQUAL (ILOC (CDDAR TEM)) Y)
047             (SETQ T1 (ILOC (LTST (CAAR TEM))))))
048               (RETURN T1)))
049             L1 (SETQ TEM (CDR TEM))
050               (GO L1)))
051             EXPR)
052
053 (DEFPROP PHASE2
054   (LAMBDA (X)
055     (PROG (SLOTLIST LDLST
056       SPFL
057       FL
058       ARGNO
059       SFLG
060       PVRL

```

051 SPLDLST
 052 RSL
 053 RSSL
 054 PROGSW
 055 VGOL
 056 GL
 057 CTAG
 058 VL
 059 HLAC)
 060
 061 (SETQ HLAC -105105)
 062 (SETQ ARGNO 1)
 063 (SETQ CNT 1)
 064 (SETQ FL NACS)
 065 L1 (COND ((ZEROP FL) (GO L2)))
 066 (SETQ SLOTLIST (CONS NIL SLOTLIST))
 067 (SETQ FL (SUB1 FL))
 068 (GO L1)
 069 L2 (COND (LSUBRF (SETQ LOJT (SUBST (QUOTE LSUBR)
 070 (QUOTE SUBR)
 071 LOUT))
 072 (OUTPUT (QUOTE (JSP 3 *LCALL))))
 073 ((AND (EQ (CADDR LOUT) (QUOTE FSUBR)) (CADR X))
 074 (OUTPUT (QUOTE (PUSHJ P *AMAKE))))
 075 (SETQ SPFL (LMB (CADR X) T))
 076 (COND ((NOT SPFL) ((NDT (EQ (CAADDR X) (QUOTE PROG))
 077 (SETQ SFLG NIL)))
 078 (LOAD1 1 (COMP (CADDR X)))
 079 (COND ((SETQ FL (ASSOC (CAR LOUT)
 080 (QUOTE ((PUSHJ . JRST)
 081 (CALL . JCALL))))
 082 (SETQ ARGNO LOUT)
 083 (SETQ LOUT (QUOTE FOO))
 084 (NPDL)
 085 (OUTPUT ARGNO)
 086 (COND ((NOT SPFL)
 087 (SETQ LOJT (CONS (CDR FL)
 088 (CONS (SUBST 0
 089 (QUOTE P)
 090 (CADR LOUT))
 091 (CDDR LOUT))))
 092 (GO EXIT))))
 093 (T (NPDL) (COND ((NOT SPFL)
 094 (OUTPUT (QUOTE (POPJ P)))
 095 (GO EXIT))))
 096 (OUTPUT (QUOTE (JRST 0 SPECSTR)))
 097 EXIT (COND (VGOL (DJTG (CAR VGOL))
 098 (SETQ VGOL (CDR VGOL))
 099 (GO EXIT)))
 100 (RETURN (COND (LDLST (PRINTTY LDLST))))
 101
 102
 103
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 110
 111
 112 (DEFPROP NPDL (LAMBDA NIL (RESTORE (QUOTE (NIL NIL NIL NIL NIL)))) EXPR)

```

001      (DEFPROP LMB
002          (LAMBDA (X Y) (PROG (ACN SFLG1 TEM)
003              (SETQ ACN 1)
004                  A (COND ((NULL X) (RETURN SFLG1))
005                      ((SPECIALP (CAR X)) (GO SP1))
006                      ((SETQ TEM (ASSOC (CAR X) LOCVARS)) (GO LV1))
007                          (T (GO SP2)))
008
009                  LV1 (COND (Y (CONT ACN (LIST (CAR X))))))
010                  SP2 (SETQ ACN (ADD1 ACN))
011                      (SETQ X (CDR X))
012                          (GO A))
013                  SP1 (COND ((NULL SFLG) (GO B)))
014                      (OUTPUT (LIST 0
015                          (COND (Y ACN) (T 0))
016                              (LIST (QUOTE SPECIAL) (CAR X)))))
017
018                  B (SETQ SFLG (SETQ SFLG1 T))
019                      (OUTPUT (QUOTE (JSP 6 SPECBIND)))
020                          (GO A)))
021
022      EXPR)
023
024      (DEFPROP CONT (LAMBDA (X Y) (RPLACA (FIND X) Y)) EXPR)
025
026      (DEFPROP CONTENTS (LAMBDA (X) (CAR (FIND X))) EXPR)
027
028      (DEFPROP OUTPUT
029          (LAMBDA (X) (PROG2 (COND ((NOT (EQ LOUT (QUOTE FOO))) (PRINT LOUT))
030                          (SETQ LOUT X)))
031
032      (DEFPROP OUT1
033          (LAMBDA (A B C)
034              (OUTPUT (CONS (COND ((OR (ATOM C) (ATOM (CAR C))) A)
035                  (T (SETQ C (CAR C))
036                      (COND ((GET A (QUOTE IMMED)))
037                          (T (SETQ C (LIST (QUOTE C) 0 0 C))
038                              A)))))))
039              (CONS B (CONS C (COND ((OR (NOT (NUMBERP C))
040                  (GREATERP C 0))
041                      NIL)
042                          ((QUOTE (P))))))))
043
044      EXPR)
045
046      (DEFPROP ADD (LAMBDA (X Y) (COND ((MEMBER X Y) Y) (T (CONS X Y)))) EXPR)

```

```

001 (DEFPROP CPUSH
002   (LAMBDA (X)
003     (PROG (Z ZZ ZZX LK)
004       (COND ((NULL (DVP (SETQ ZZX (CONTENTS X)))) (RETURN NIL))
005         ((LESSP X 1) (GO NOSLOT1)))
006         A (SETQ ZZ 0)
007         (SETQ Z (CDR (NACS1)))
008         A2 (COND ((NULL Z) (GO NOSLOT))
009           ((DVP (CAR Z)))
010           ((AND LK (OR (NOT (NUMBERP (CDAR Z))) (SPECIALP (CAAR Z))))
011             (GO FNDSLOT))
012             ((EQ (CAR ZZX) (CAAR Z)) (GO FNDSLOT)))
013               (SETQ Z (CDR Z))
014               (SETQ ZZ (SUB1 ZZ))
015               (GO A2))
016               FNDSLOT
017                 (CONT ZZ ZZX)
018                 (OUT1 (QUOTE MOVE) X ZZ)
019                 RET (RETURN (CONT X (CONS (CAR ZZX) (QUOTE DJP))))
020                 NOSLOT
021                   (COND ((SETQ LK (NOT LK)) (GO A)))
022                     NOSLOT1
023                       (COND ((AND PROGSW (NOT (ASSOC (CAR ZZX) LOCVARS)))
024                         (SETQ Z (LENGTH SLOTLIST))
025                           (CPVRL)
026                             (COND ((LESSP X 1)
027                               (SETQ X
028                                 (PLUS X
029                                   (DIFFERENCE Z (LENGTH SLOTLIST)))))))
030                                 (OPUSH X)
031                                 (CONT 0 ZZ)
032                                 (GO RET)))
033               EXPR)
034
035 (DEFPROP SPECIALP (LAMBDA (X) (MEMBER X SPVARS)) EXPR)
036
037 (DEFPROP REMOVL
038   (LAMBDA (F VAR) (PROG NIL
039     (SETQ VAR (GET VAR (QUOTE VALUE)))
040     (COND ((NULL (CDR VAR)) (RETURN NIL))
041       ((F (CADR VAR)) (RPLACD VAR (CDDR VAR)))
042         (T (SETQ VAR (CDR VAR)))))
043         (GO A)))
044   EXPR)
045
046 (DEFPROP REMOVS (LAMBDA (DATA) (REMOVL (FUNCTION REM1) (QUOTE SPLDLST))) EXPR)
047
048 (DEFPROP REMOVE
049   (LAMBDA (DATA) (PROG NIL
050     (REMOVL (FUNCTION REM1) (QUOTE LDLST))
051       (REMOVL (FUNCTION REM1) (QUOTE SPLDLST)))))
052   EXPR)
053
054 (DEFPROP REM1 (LAMBDA (X) (EQUAL X DATA)) EXPR)

```

```

001 (DEFPROP BOOL1
002   (LAMBDA (EXP TAG F)
003     (COND ((EQ (CAR EXP) (QUOTE AND)) (BOOL2 (CDR EXP) TAG T F)
004       (SETQ CNT (PLUS 2 CNT)))
005       ((EQ (CAR EXP) (QUOTE OR))
006         (BOOL2 (CDR EXP) TAG NIL (NOT F))
007         (SETQ CNT (PLUS 2 CNT)))
008       ((EQ (CAR EXP) (QUOTE NOT)))
009         (BOOL1 (CADR EXP) TAG (NOT F)))
010       ((EQ (CAR EXP) (QUOTE EQ)) (BOOL3 (CDR EXP) F TAG)
011         (OUTJ (QUOTE JRST) O TAG)))
012       ((EQ (CAR EXP) (QUOTE QUOTE)))
013         (BOOL2 NIL TAG NIL (COND (F (CADR EXP))
014           (T (NOT (CADR EXP))))))
015       ((EQ (CAR EXP) (QUOTE ZEROP))
016         (SETQ EXP (LOCATE (COMP (CADR EXP)) NO)))
017         (OUTJ (COND (F (QUOTE SOJE)) (T (QUOTE SOJN))) EXP TAG)
018         (CONT EXP NIL)))
019         (T (SETQ EXP (LOCATE (COMP EXP) NO)))
020           (OUTJ (COND (F (QUOTE JUMPN)) (T (QUOTE JUMPE)))
021             EXP
022             TAG)
023             (COND (F (RSLSET TAG) (CONT EXP (QUOTE (QUOTE NIL)))))
024               (T (SETQ F (CONTENTS EXP))
025                 (CONT EXP (QUOTE (QUOTE NIL)))
026                   (RSLSET TAG)
027                     (CONT EXP F))))))
028           EXP)
029
030 (DEFPROP RSLSET
031   (LAMBDA (X) (COND ((EQ X CTAG)
032     (SETQ RSL (COND (RSL (QUOTE LOSE))
033       (T (APPEND SLOTLIST NIL)))))))
034   EXP)
035
036 (DEFPROP BOOL2
037   (LAMBDA (EXP TAG F1 F2)
038     (PROG (G)
039       (CLEAR1)
040       (PUTPROP (SETQ G (GENSYM))
041         (APPEND SLOTLIST NIL)
042           (QUOTE LEVEL)))
043       A (COND ((NULL EXP) (COND (F2 (OUTJ (QUOTE JRST) O TAG)))
044         (GO C))
045           ((AND F2 (NULL (CDR EXP))) (GO B)))
046           (BOOL1 (CAR EXP) (COND (F2 G) (T TAG)) (NOT F1))
047           (SETQ EXP (CDR EXP))
048           (GO A))
049       B (BOOL1 (CAR EXP) TAG F1)
050           (OUTTAG G)
051       C (CLRACCS)))
052           EXP)

```

```

001 (DEFPROP BOOL3
002   (LAMBDA (EXP F TAG)
003     (PROG (W X Y Z AC)
004       (SETQ X (COMP (CAR EXP)))
005       (SETQ Y (ILOC1 (SETQ Z (COMP1 (CADR EXP) (FRAC1))))
006         (FRAC1)))
007       (SETQ W (ILOC1 X (FRAC1))))
008       (COND ((AND (NUMBERP W) (LESSP 0 W)) (SETQ AC W)
009           (COND ((AND (NUMBERP Y) (GREATERP Y 0)) (REMOVE Z))
010             (REMOVE X)
011               (RST TAG)
012               (SETQ Y (LOC Z))
013               (GO A))
014               ((AND (NUMBERP Y) (LESSP 0 Y)) (SETQ AC Y)
015                 (REMOVE Z)
016                 (RST TAG)
017                 (SETQ Y (LOC X))
018                 (GO A)))
019               (LOAD1 (SETQ AC (FRAC1)) X)
020               (RST TAG)
021               (SETQ Y (LOC Z))
022               (GO A1)
023               A (REMOVE X)
024               A1 (REMOVE Z)
025               (CWORDL)
026               (DUT1 (COND (F (QUOTE CAMP)) (T (QUOTE CAME))) AC Y)))
027               EXPR)
028
029 (DEFPROP FRAC1 (LAMBDA NIL (COND ((DVP (CONTENTS 1)) (FREAC)) (T 1))) EXPR)
030
031 (DEFPROP RST
032   (LAMBDA (X) (COND ((NULL X) NIL)
033     ((ASSOCCR X GL) (RESTORE PRSSL))
034     ((REMPROP X (QUOTE SET)))
035     (CWORDL)
036     (PUTPROP X (APPEND SLOTLIST NIL) (QUOTE LEVEL)))
037     ((SETQ X (GET X (QUOTE LEVEL))) (RESTORE X)
038       (T (RESTORE RSSL))))
039   EXPR)
040
041 (DEFPROP ASSOCCR
042   (LAMBDA (X Y) (PROG NIL
043     A (COND ((NULL Y) (RETURN NIL))
044       ((EQ X (CDAR Y)) (RETURN (CAR Y))))
045       (SETQ Y (CDR Y)))
046       (GO A)))
047   EXPR))

```

```

001      (DEFFPROP BOOL4
002          (LAMBDA (EXP) (PROG (G)
003              (COND ((EQ (CAR EXP) (QUOTE EQ))
004                  (BOOL3 (CDR EXP) NIL NIL)
005                  (GO L1))
006
007                  (PUTPROP (SETQ G (GENSYM)) T (QUOTE SET))
008                  (BOOL1 EXP G T)
009                  (COND ((NOT (GET G (QUOTE USED))) (CPUSH NO)))
010                  L (COND ((NOT EFFS) (OUT1 (QUOTE TDZA) NO NO)))
011                  (OUTTAG G)
012
013                  (COND ((NOT EFFS) (OUT1 (QUOTE MOVEI) NO T))))))
014
015      (DEFFPROP ITER
016          (LAMBDA (FN ARGS)
017              (COND ((NULL (CDR ARGS)) (P1 (CAR ARGS)))
018                  (T (LIST FN (P1 (CAR ARGS)) (ITER FN (CDR ARGS)))))))
019
020      (DEFFPROP OUTJ
021          (LAMBDA (X Y Z)
022              (PROG NIL
023                  (CWORLD)
024                  (CSPLOD2 1 NIL)
025                  (RST Z)
026
027                  (PUTPROP Z T (QUOTE USED))
028                  (COND ((EQUAL LOUT (GET Z (QUOTE PREV))))
029                      (RETURN (SETQ LOJT (LIST X Y (LIST Z -1))))))
030
031                  (OUTPUT (LIST X Y Z)))
032
033      (DEFFPROP ADR
034          (LAMBDA (X) (PROG (Z)
035              (COND ((SETQ Z (ASSOC X GL)) (RETURN (CDR Z)))
036                  (PRINTTY (LIST (QUOTE UNDEFINED) (QUOTE TAG) X))
037
038                  (RETURN EXIT)))
039
040      (DEFFPROP FREAC
041          (LAMBDA NIL (PROG (Z ZZ SW)
042              L1 (SETQ ZZ 0)
043              (SETQ Z SLOTLIST)
044              L2 (SETQ ZZ (ADD1 ZZ))
045              (COND ((GREATERP ZZ NACS)
046                  (COND (SW (CPUSH NACS) (RETURN NACS))
047                      (T (SETQ SW T) (GO L1))))
048
049                  ((OR (NULL (CAR Z)) (AND SW (DVP (CAR Z)))))
050                  (RETURN ZZ)))
051
052                  (SETQ Z (CDR Z))
053                  (GO L2)))
054
055      (DEFFPROP OUTTAG
056          (LAMBDA (X) (COND ((GET X (QUOTE USED)) (CLRADS) (RST X) (OUTPUT X)))
057
058          EXPR)

```

001
002 (DEFFPROP COMARG
003 (LAMBDA (Y)
004 (PROG NIL
005 (COND ((EQ (CAR Y) (QUOTE QUOTE))
006 (OUT1 (QUOTE MOVE) NO (INDEX))
007 (RETURN (OUTPUT (LIST (QUOTE HRRZ) NO Y NO))))
008 (LOAD1 NO Y)
009 (OUT1 (QUOTE ADD) NO (INDEX))
010 (RETURN (OUTPUT (LIST (QUOTE HRRZ) NO O NO))))
011 EXPR)
012
013 (DEFFPROP INDEX (LAMBDA NIL (PLUS (MINJS (LENGTH SLOTLIST)) NACS -1)) EXPR)
014
015 (DEFFPROP FIND
016 (LAMBDA (X) (PROG (ZZ)
017 (SETQ ZZ SLOTLIST)
018 (COND ((GREATERP X 0) (GO LP3)))
019 (SETQ X (PLUS 1 NACS (MINUS X)))
020 LP3 (SETQ X (SUB1 X))
021 (COND ((ZEROP X) (RETURN ZZ)))
022 (SETQ ZZ (CDR ZZ))
023 (GO LP3))
024 EXPR)
025
026 (DEFFPROP SPUSH (LAMBDA NIL (RPLACD (NACS1) (CONS NIL (CDR (NACS1)))))) EXPR)
027 (DEFFPROP SPOP (LAMBDA NIL (RPLACD (NACS1) (CDDR (NACS1)))))) EXPR)

```

001
002 (DEFFPROP PLLOC
003   (LAMBDA (IVAR NO)
004     (REPLACD (SASSOC IVAR
005       LOCVARS
006       (FUNCTION (LAMBDA NIL (CAR (SETQ LOCVARS
007         (CONS (LIST IVAR)
008           LOCVARS)))))))
009   EXPR)      NO)))
010
011
012 (DEFFPROP PRINTTY
013   (LAMBDA (DATA) (LOG NIL (FUNCTION (LAMBDA NIL (PRINT DATA))))))
014
015 (DEFFPROP DOCOND
016   (LAMBDA (EXP AC)
017     (PROG (G1 G2 H1 H2 T1 RSL IRSSL JSP CTAG TEM)
018       (PUTPROP (SETQ G1 (GENSYM))
019         (SETQ IRSSL (APPEND SLOTLIST NIL))
020         (QUOTE LEVEL))
021
022       A (SETQ JSP T)
023       (SETQ RSL NIL)
024       (COND ((NULL EXP) (COND (T1 (OUT1 (QUOTE MOVEI)
025         AC
026           (QUOTE (QUOTE NIL))))))
027             (OUTTAG G1)
028             (CLRACS)
029             (RESTORE IRSSL)
030             (RETURN NIL))
031
032       ((NULL (CDAR EXP))
033         (LOAD1 AC (COMP (CAAR EXP)))
034         (COND ((CDR EXP) (OUTJ (QUOTE JUMPN) AC G1))
035           (T (RESTORE IRSSL)))
036           (GO B))
037         ((AND (EQUAL (CDAR EXP) (QUOTE ((QUOTE NIL)))))
038           (EQ (CAAAR EXP) (QUOTE NULL))
039           (OR (ATOM (CADAAR EXP))
040             (NOT (MEMBER (CAR (CADAAR EXP))
041               (QUOTE (AND OR
042                 NULL
043                 EQ
044                 ZEROP))))))
045
046       (LOAD1 AC (COMP (CADAAR EXP)))
047       (OUTJ (QUOTE JUMPE) AC G1)
048       (SETQ T1 T)
049       (GO D))
050
051       ((OR LDLST(CDDOAR EXP)) (GO L2))
052       ((AND(EQ (CAADAR EXP) (QUOTE GO))
053         (ATOM (SETQ T1 (CADADR (CAR EXP))))))
054         (BOOL1 (CAAR EXP) (ADR T1) T)
055         (GO B))
056         ((EQUAL (CADAR EXP) (QUOTE (RETURN (QUOTE NIL)))))
057         (BOOL1 (CAAR EXP) EXITN T)
058         (GO B)))
059
060   L2 (SETQ JSP (NOT (OR (EQ (SETQ H2 (CAAR (LAST (CAR EXP))))))
061     (QUOTE RETURN)))
062     (EQ H2 (QUOTE GO))))
063
064   (PUTPROP (SETQ G2 (SETQ CTAG (GENSYM)))
065     IRSSL
066     (QUOTE LEVEL)))

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      (SETQ RSL NIL)
      (BOOL1 (CAAR EXP) G2 NIL)
      (SETQ H2 (COND ((AND RSL (NOT (ATOM RSL))) RSL)
                     (T (APPEND SPLITLIST NIL))))
      (SETQ H1 (APPEND SPLITLIST NIL)))
      (SETQ T1 (CDAR EXP))
      (COND ((NULL (CDR T1)) (GO L1)))
      (COMPE (CAR T1))
      (SETQ T1 (CDR T1))
      (GO LP1)
LP1   (COND (EFFS (COMPE (CAR T1)))
           (T (LOAD1 AC (COMP (CAR T1)))))
           (CWORDL)
           (SETQ SPLITLIST H1)
           (SETQ H1 SPLITLIST)
           (SETQ SPLITLIST H2)
           (SETQ TEM (EQUAL (CONTENTS AC) (QUOTE (QUOTE NIL))))
           (SETQ SPLITLIST H1)
           (SETQ T1 NIL)
           (COND (JSP (COND ((OR (CDR EXP)
                           (AND (NOT EFFS)
                           (NOT TEM)
                           (SETQ T1
                                 (GET G2 (QUOTE USED)))))))
                           (OUTJ (QUOTE JRST) D G1))
                  (T (RESTORE IRSSL))))
           (SETQ SPLITLIST H2)
           (OUTPUT G2)
           (GO D)
           B   (SETQ T1 NIL)
           D   (SETQ EXP (CDR EXP))
           (GO A)))
EXPR)

(DEFPROP SPECIAL
  (LAMBDA (X) (PROG NIL
    L   (COND ((NULL X) (RETURN T)))
    (PUTPROP (CAR X) T (QUOTE SPECIAL))
    (SETQ X (CDR X))
    (GO L)))
  FEXPR)

(DEFPROP CLEAR (LAMBDA NIL (PROG NIL (CSPLD) (CWORDL) (RETURN (CPVRL))) EXPR)
(DEFPROP CLEAR1
  (LAMBDA NIL (PROG NIL
    (CSPLD3 NIL)
    (CSPLD2 1 NIL)
    (CWORDL)
    (RETURN (CPVRL)))))

(DEFPROP A HLRZ# INST)
(DEFPROP B HRRZ# INST)
(DEFPROP HRRZ# HRRZ IMMED)
(DEFPROP HLRZ# HLRZ IMMED)

```

(DEFPROP INSPECIAL

(LAMBDA(L)
 (MAPC (FUNCTION (LAMBDA(X)
 (REMPROP X
 (QUOTE SPECIAL))))

L) FEXPR)

121 (DEFPROP MOVE MOVE1 IMMED)
122 (DEFPROP CAMN CAIN IMMED)
123 (DEFPROP CAME CAIE IMMED)
124
125 (DEFPROP CAR (A) OPEN)
126
127 (DEFPROP CDR (D) OPEN)
128
129 (DEFPROP CAAR (A . CAR) OPEN)
130
131 (DEFPROP CADR (A . CDR) OPEN)
132
133 (DEFPROP CDAR (D . CAR) OPEN)
134
135 (DEFPROP CDDR (D . CDR) OPEN)
136
137
138 (DEFPROP ADD1 3 ACS)
139
140 (DEFPROP SUB1 3 ACS)
141
142 (DEFPROP CONS XCONS COMMU)
143
144 (DEFPROP CONS 3 ACS)
145
146 (DEFPROP ATOM 1 ACS)
147
148 (DEFPROP NUMBERP 1 ACS)
149
150 (DEFPROP GENSYM 7 ACS)
151
152 (DEFPROP CAAAR (A . CAAR) OPEN)
153
154 (DEFPROP CAADR (A . CADR) OPEN)
155
156 (DEFPROP CADAR (A . CDAR) OPEN)
157
158 (DEFPROP CDAAR (D . CAAR) OPEN)
159
160 (DEFPROP CDAADR (D . CADR) OPEN)
161
162 (DEFPROP CDDAR (D . CDAR) OPEN)
163
164 (DEFPROP CDDDR (D . CDDR) OPEN)
165
166 (DEFPROP CADDR (A . CDDR) OPEN)
167
168 (DEFPROP *PLUS *PLUS COMMU)
169
170 (DEFPROP EQUAL EQUAL COMMU)
171
172 (DEFPROP EQUAL 7 ACS)
173
174 (DEFPROP *TIMES *TIMES COMMU)
175
176 (DEFPROP XCONS 3 ACS)
177
178 (DEFPROP NCONS 3 ACS)
179
180

181 (DEFPROP *APPEND 37 ACS)
182
183 (DEFPROP MINUS 3 ACS)
184
185 (DEFPROP GET 1 ACS)
186
187 (DEFPROP *GREAT *LESS COMMU)
188
189 (DEFPROP *LESS *GREAT COMMU)
190
191 (DEFPROP MEMBER 37 ACS)
192
193 (DEFPROP LENGTH 7 ACS)
194
195 (DEFPROP LAST 3 ACS)
196
197 (DEFPROP CAAAAR (A . CAAAR) OPEN)
198
199 (DEFPROP CAAADR (A . CAADR) OPEN)
200
201 (DEFPROP CAADAR (A . CADAR) OPEN)
202
203 (DEFPROP CAADDR (A . CADDR) OPEN)
204
205 (DEFPROP CADAAR (A . CDAAR) OPEN)
206
207 (DEFPROP CADADR (A . CDADR) OPEN)
208
209 (DEFPROP CADDAR (A . CDDAR) OPEN)
210
211 (DEFPROP CADDDR (A . CDDDR) OPEN)
212
213 (DEFPROP CDDDDR (D . CDDDR) OPEN)
214
215 (DEFPROP CDDDAR (D . CDDAR) OPEN)
216
217 (DEFPROP CDDADR (D . CDADR) OPEN)
218
219 (DEFPROP CDDAAR (D . CDAAR) OPEN)
220
221 (DEFPROP CDAADDR (D . CADDR) OPEN)
222
223 (DEFPROP CDAADAR (D . CADAR) OPEN)
224
225 (DEFPROP CDAADDR (D . CAADR) OPEN)
226
227 (DEFPROP CDAAAAR (D . CAAAAR) OPEN)
228
229 (DEFPROP RPLACD HRRM# INST)
230
231 (DEFPROP RPLACA HRLM# INST)
232
233 (DEFPROP RPLACD HLLZS# INSTN)
234
235 (DEFPROP RPLACA HRRZS# INSTN)