```
(RPAQQ MACROTESTCOMS
       ((E (RADIX 8))
        (DECLARE: EVAL@COMPILE DONTCOPY (MACROS MTHELP MTCHECKSTK CKEQ CKFEQ CKFUZZYEQ MTCHECK MTCHECK1))
        (FNS !DIAGNOSE !DIAGNOSELP)
        (* "Basic entries")
        (INITVARS (ERRORMESSAGESTREAM T)
               (!MTALLOWINEXACTFLG T)
               (!MTUSERAIDFLG T))
        (FNS !CKEQ !CKFEQ !CKFUZZYEQ !MRAID)
        (* "Utility fns")
        (FNS !CONSTEST !COPY !SMASH !APPENDTEST)
        (FNS !INTERPTEST !CHECKARGS !CHECKLSTARARG !CHECKLSTARSETARG)
        (* "CONS and RPLAC tests")
        (FNS !GCTEST !GCTEST1 !GCTEST2 !GCTESTSETF !GCTESTSETG)
        (* "Test of garbage collector")
        (FNS MINILOGOUT)
        (* "File MACROTESTAUX contains freevar and numeric tests")
        (FNS !CHARTEST !STRPOSTEST !CHARFILETEST)
        (DECLARE: DONTEVAL@LOAD DONTEVAL@COMPILE DOCOPY (FILES MACROTESTAUX)))))

(DECLARE: EVAL@COMPILE DONTCOPY

(DECLARE: EVAL@COMPILE

(PUTPROPS MTHELP MACRO [X (LIST (QUOTE !MRAID)
                               (COND
                                  ((CDR X)
                                   (CONS (QUOTE LIST)
                                         X))
                                  (T (CAR X])

(PUTPROPS MTCHECKSTK MACRO [ARGS (SUBPAIR (QUOTE (ARGS ID))
                                          (LIST ARGS (RAND 1 MAX.SMALLP))
                                          (QUOTE (OR (EQ (PROG1 ID . ARGS)
                                                         ID)
                                                     (RAID (QUOTE WRONG#PUSHED])

(PUTPROPS CKEQ MACRO ((FORM ANSWER)
                      ([LAMBDA (Password Result)
                         (DECLARE (LOCALVARS Password Result))
                         (OR (EQ Password (QUOTE 227))
                             (RAID (QUOTE WRONG#PUSHED)))
                         (!CKEQ Result ANSWER (QUOTE FORM]
                       (QUOTE 227)
                       FORM)))

(PUTPROPS CKFEQ MACRO ((FORM ANSWER)
                       ([LAMBDA (Password Result)
                          (DECLARE (LOCALVARS Password Result))
                          (OR (EQ Password (QUOTE 227))
                              (RAID (QUOTE WRONG#PUSHED)))
                          (!CKFEQ Result ANSWER (QUOTE FORM]
                        (QUOTE 227)
                        FORM)))

(PUTPROPS CKFUZZYEQ MACRO ((FORM ANSWER)
                           ([LAMBDA (Password Result)
                              (DECLARE (LOCALVARS Password Result))
                              (OR (EQ Password (QUOTE 227))
                                  (RAID (QUOTE WRONG#PUSHED)))
                              (!CKFUZZYEQ Result ANSWER (QUOTE FORM]
                            (QUOTE 227)
                            FORM)))

(PUTPROPS MTCHECK MACRO [Y (CONS (QUOTE MTCHECKSTK)
                                 (MAPCAR Y (FUNCTION (LAMBDA (X)
                                                       (LIST (QUOTE MTCHECK1)
                                                             X])

(PUTPROPS MTCHECK1 MACRO [(X)
                          (OR X (MTHELP (QUOTE (Failed: X])
```

```
)
)

(DEFINEQ

(!DIAGNOSE
   [LAMBDA NIL                                                    (* JonL " 7-Nov-84 19:20")
      (!NUMBERTEST)
      (!FNUMTEST)
      (!MIXNUMTEST)
      (!GCTEST)
      (!CONSTEST)
      (!FVARTEST)
      (!INTERPTEST)
      (CHECKCONSPAGES)])


(!DIAGNOSELP
   [LAMBDA NIL                                                    (* JonL " 7-Nov-84 18:42")
      (PROG ((I 0))
         LP    (!DIAGNOSE)
               (\STOPDISPLAY)
               (\RELEASEWORKINGSET)
               (\STARTDISPLAY)
               (printout T "Pass " (add I 1)
                      " completed." T)
               (GO LP)])

)

;; Basic entries

(RPAQ? ERRORMESSAGESTREAM T)

(RPAQ? !MTALLOWINEXACTFLG T)

(RPAQ? !MTUSERAIDFLG T)

(DEFINEQ

(!CKEQ
   [LAMBDA (RESULT ANSWER FORM)                                   (* JonL " 7-Nov-84 17:20")
      (OR (EQ RESULT ANSWER)
          (AND (EQ (NTYPX RESULT)
                   (NTYPX ANSWER))
               (EQUAL RESULT ANSWER))
          (!MRAID (LIST FORM (QUOTE =>)
                        RESULT
                        (QUOTE should-have-been)
                        ANSWER])


(!CKFEQ
   [LAMBDA (RESULT ANSWER FORM)                                   (* JonL " 7-Nov-84 17:20")
      (OR (AND (FLOATP RESULT)
               (FEQP RESULT ANSWER))
          (!MRAID (LIST FORM (QUOTE =>)
                        RESULT
                        (QUOTE should-have-been)
                        ANSWER])


(!CKFUZZYEQ
   [LAMBDA (X Y)                                                  (* JonL " 7-Nov-84 17:21")
                                                                  (* Essentially FEQP except that the low-order bit is ignored.)

      (OR (AND (FLOATP X)
               (FLOATP Y))
          (!MRAID "An arg to CKFUZZYEQ is non-FLOATP"))
      (AND (EQ (BITCLEAR (fetch (FLOATP LOWORD) of X)
                      1)
               (BITCLEAR (fetch (FLOATP LOWORD) of Y)
                      1))
           (OR (EQ (fetch (FLOATP HIWORD) of X)
                   (fetch (FLOATP HIWORD) of Y))
               (AND (EQ 0 (fetch (FLOATP HIWORDNOSIGNBIT) of X))
                    (EQ 0 (fetch (FLOATP HIWORDNOSIGNBIT) of Y])


(!MRAID
   [LAMBDA (MESS1 MESS2 FLG)                                      (* JonL " 7-Nov-84 17:28")
      (if !MTUSERAIDFLG
          then (RAID MESS1 MESS2 FLG)
        else (printout ERRORMESSAGESTREAM "[RAID-level error] " MESS1 MESS2 T])

)
```

;; Utility fns

(DEFINEQ

(**!CONSTEST**
  [LAMBDA NIL                                                          (* JonL " 7-Nov-84 19:18")
    (PROG (A B C D)
          (MTCHECKSTK (PROG1 NIL
                             (SETQ A (CONS (QUOTE A)
                                           (QUOTE B)))
                             (MTCHECK (EQ (CAR A)
                                          (QUOTE A))
                                  (EQ (CDR A)
                                      (QUOTE B)))
                             [SETQ A (CONS (QUOTE A)
                                           (SETQ B (QUOTE (D E F]
                             (MTCHECK (EQ (CAR A)
                                          (QUOTE A))
                                  (EQ (CDR A)
                                      B))
                             (SETQ A (DOCOLLECT (CONS 1)))
                             (MTCHECK (EQUAL (CAR A)
                                             (QUOTE (1)))
                                  (EQ (CDR A)
                                      A)
                                  (EQ (\REFCNT A)
                                      1)
                                  (EQ (\REFCNT (CAR A))
                                      1))
                   (**for** X **on** (CDR (**for** I **from** 1 **to** 256 **collect** (CONS I)))
                      **do** (MTCHECK (EQ (\REFCNT X)
                                     1))
                                  (EQ (\REFCNT (CAR X))
                                      1))
                   (SETQ D (**for** I **from** 0 **to** 512 **collect** (LIST I)))
                   [**for** X **on** D **do** (PROG ((Y (CDR X))
                                       (AX (CAR X))
                                       (AY (CADR X))
                                       (DY (CDDR X)))
                                      (OR Y (RETURN))
                                      [MTCHECK (PROGN (**swap** (CAR X)
                                                            (CAR Y))
                                                 (AND (EQ (CAR X)
                                                          AY)
                                                      (EQ (CAR Y)
                                                          AX]
                                      [MTCHECK (PROGN (**swap** (CDR Y)
                                                            (CDR X))
                                                 (AND (EQ (CDR X)
                                                          DY)
                                                      (EQ (CDR Y)
                                                          Y]
                                      (MTCHECK (PROGN    (* Now put them back)
                                                    (**swap** (CAR X)
                                                           (CAR Y))
                                                    (**swap** (CDR Y)
                                                           (CDR X))
                                                 (AND (EQ Y (CDR X))
                                                      (EQ (CAR X)
                                                          AX)
                                                      (EQ (CAR Y)
                                                          AY]
                   [**for** VAR **in** (LIST NIL D "A STRING")
                      **do** (**for** X **on** D **do** (MTCHECK (EQ (PROG1 (CDR X)
                                                          (**swap** (CDR X)
                                                                 VAR)
                                                          (**swap** (CDR X)
                                                                 VAR))
                                                   (CDR X]
                   (**for** X **on** (CDR D) **do** (MTCHECK (EQ (\REFCNT X)
                                                 1)
                                            (EQ (\REFCNT (CAR X))
                                                1)))
                   [**for** I **from** 0 **to** 512 **do** (MTCHECK (EQUAL (**pop** D)
                                                     (LIST I]
                   [**for** X
                      **in** (QUOTE ((((A) . B))
                                 (A B)
                                 ((A B . C))
                                 ((A B C D . E))
                                 [(A . B)
                                  (C . D)
                                  (E . F)
                                  ((((((((((((((G]
                                 (1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20)))
                      **bind** Y K Z **do** [MTCHECK (EQUAL X (SETQ Y (**!COPY** X]
                                 [MTCHECK (EQUAL X (SETQ Z (COPY X]

```
                                    [MTCHECK (EQUAL X (SETQ Z (!SMASH Z]
                                    (MTCHECK (EQUAL X (SETQ K (MAPCAR X (FUNCTION (LAMBDA (YY)
                                                                                      YY])])
```

## (**!COPY**
```
  [LAMBDA (X)                                             (* lmm "25-FEB-81 21:47")
     (COND
        ((NLISTP X)
         X)
        (T (CONS (!COPY (CAR X))
                 (!COPY (CDR X]
```

## (**!SMASH**
```
  [LAMBDA (X)                                             (* bvm: "14-JAN-82 17:04")
     (COND
        [(LISTP X)
         (RPLACD (RPLACA X (!SMASH (CAR X)))
                 (!SMASH (CDR X]
        ((NULL X)
         (RPLACA (RPLACD X X)
                 X))
        (T X])
```

## (**!APPENDTEST**
```
  [LAMBDA NIL                                             (* JonL "16-Dec-84 21:06")
     [to 1000 do (MTCHECK (EQUAL (QUOTE (A B C D))
                                 (APPEND (QUOTE (A B))
                                         (QUOTE (C D]
     (to 512 do (MTCHECK (EQUAL (QUOTE (A B . C))
                                (APPEND (QUOTE (A B))
                                        (QUOTE C))
```

)

(DEFINEQ

## (**!INTERPTEST**
```
  [LAMBDA NIL                                             (* lmm "30-MAY-83 19:40")
     (PROG (INTERPDEF ANON)
           [PUTD (QUOTE !INTERPTESTER)
                 (SETQ INTERPDEF (LIST (QUOTE LAMBDA)
                                       NIL
                                       (QUOTE (!CHECKARGS]
           [for FORMAL in (QUOTE (NIL (A)
                                      (A B)
                                      (A B C)
                                      (A B C D)
                                      (A B C D E)
                                      (A B C D E F)
                                      N))
              do (RPLACA (CDR INTERPDEF)
                         FORMAL)
                 (for ACTUAL in (QUOTE (NIL (1)
                                           (1 2)
                                           (1 2 3)
                                           (1 2 3 4)
                                           (1 2 3 4 5)
                                           (1 2 3 4 5 6)))
                    do (SETQ ANON T)
                       (APPLY INTERPDEF ACTUAL)
                       (EVAL (CONS INTERPDEF ACTUAL))
                       (SETQ ANON)
                       (APPLY (QUOTE !INTERPTESTER)
                              ACTUAL)
                       (EVAL (CONS (QUOTE !INTERPTESTER)
                                   ACTUAL))
                       (COND
                          ((EQ FORMAL (QUOTE N))
                           (APPLY [QUOTE (LAMBDA N (PROG ((I 1))
                                                     LP
                                                     (COND ((NOT (IGREATERP I N))
                                                            (!CHECKLSTARARG I (ARG N I))
                                                            (SETQ I (ADD1 I))
                                                            (GO LP)))
                                                     (SETQ I 1)
                                                     LP2
                                                     (COND ((NOT (IGREATERP I N))
                                                            (SETARG N I (IPLUS 200 I))
                                                            (!CHECKLSTARSETARG I (ARG N I))
                                                            (SETQ I (ADD1 I))
                                                            (GO LP2]
                                  ACTUAL]
           (PROG (A B C D)
                 (for PAIR in (QUOTE ((3 3)
```

```
                                               (T T)
                                               (NIL NIL)
                                               ((SETQ FOOVAR 3)
                                                3)
                                               (A NIL)
                                               (B NIL)
                                               (C NIL)
                                               (D NIL)
                                               ((SETTOPVAL (QUOTE FOOVAR)
                                                       37)
                                                37)
                                               (FOOVAR 37)
                                               ((SETQ A 39)
                                                39)
                                               ((SETQ B 47)
                                                47)
                                               ((SETQ C 66)
                                                66)
                                               (A 39)
                                               (B 47)
                                               (C 66)
                                               ((PROG NIL (RETURN 12))
                                                12)
                                               ((PROG NIL (GO L1)
                                                       L1
                                                       (RETURN 101)
                                                       (RETURN 102)
                                                       (RETURN 103))
                                                101)
                                               ((PROG ((A 324))
                                                       (RETURN A))
                                                324)
                                               ((PROG ((A 1023)
                                                        (B 412))
                                                       (OR (AND (EQ A 1023)
                                                                (EQ B 412))
                                                           (MTHELP)))
                                                NIL)))
                          do (OR (EQ (EVAL (CAR PAIR))
                                     (CADR PAIR))
                                 (MTHELP PAIR "TEST FAILED")))
                      (OR (AND (EQ A 39)
                               (EQ B 47)
                               (EQ C 66)
                               (EQ FOOVAR 37))
                          (MTHELP (QUOTE (COMPILEVAL]))


(!CHECKARGS
  [LAMBDA NIL
    (DECLARE (USEDFREE ACTUAL ANON FORMAL INTERPDEF A B C D E F N))
                                            (* JonL " 7-Nov-84 17:15")
      [COND
         [(LISTP FORMAL)
          (for Y in FORMAL as (X _ ACTUAL) bind VAL by (CDR X) do (COND
                                            ((OR (NEQ (SETQ VAL (SELECTQ Y
                                                                    (A A)
                                                                    (B B)
                                                                    (C C)
                                                                    (D D)
                                                                    (E E)
                                                                    (F F)
                                                                    (SHOULDNT)))
                                                      (CAR X))
                                                 (NEQ (SETQ VAL (EVALV Y))
                                                      (CAR X)))
                                             (MTHELP Y "Free Value wrong – was " VAL
                                                 "should be" (CAR X]
         (FORMAL (OR (AND (EQ (EVALV FORMAL)
                              (LENGTH ACTUAL))
                          (EQ N (EVALV FORMAL)))
                     (MTHELP (QUOTE ARGCOUNT)))
                 (for I from 1 to N as X in ACTUAL do (OR (EQ (ARG N I)
                                                              X)
                                                          (MTHELP (QUOTE ARG)
                                                                  I]
      (PROG ((FRAME (REALSTKNTH -1 (QUOTE !CHECKARGS)))
             SCANFRAME NARGS NAME)
            (OR FRAME (MTHELP "Interpreter frame not found"))
            (OR (EQ (COND
                       (ANON INTERPDEF)
                       (T (QUOTE !INTERPTESTER)))
                    (SETQ NAME (STKNAME FRAME)))
                (MTHELP "Interpreter frame name wrong:" NAME))
            (for X in FORMAL do (OR (EQP FRAME (SETQ SCANFRAME (STKSCAN X)))
                                    (MTHELP "STKSCAN failed for var" X))
                                (RELSTK SCANFRAME))
```

```
                    (OR (IGEQ (SETQ NARGS (STKNARGS FRAME))
                              (LENGTH FORMAL))
                        (MTHELP "STKNARGS WRONG" NARGS))
                    (RELSTK FRAME])
```

## (!CHECKLSTARARG
```
  [LAMBDA (I VAL)                                          (* bvm: "26-SEP-81 21:19")
     (OR (EQ VAL (CAR (NTH ACTUAL I)))
         (MTHELP "INTERPRETED ARG" I])
```

## (!CHECKLSTARSETARG
```
  [LAMBDA (I VAL)                                          (* bvm: "26-SEP-81 21:20")
     (OR (EQ VAL (IPLUS I 200))
         (MTHELP "INTERPRETED SETARG" I])
```

```
)
```

```
;; CONS and RPLAC tests
```

```
(DEFINEQ
```

## (!GCTEST
```
  [LAMBDA NIL                                              (* bvm: "30-NOV-81 17:23")
     (!GCTEST1)
     (!GCTEST2])
```

## (!GCTEST1
```
  [LAMBDA NIL
     (DECLARE (GLOBALVARS !GV1 !GV2 !GV3))                 (* JonL "16-Mar-84 12:10")
     (PROG (A B C D E)
           (MTCHECK (PROGN (SETQ A (CONS 1 2))
                           (EQ (\REFCNT A)
                               0))
                    (PROGN (SETQ B (CONS A))
                           (AND (EQ (\REFCNT A)
                                    1)
                                (EQ (\REFCNT B)
                                    0)))
                    (PROGN (SETQ C (CONS A))
                           (AND (EQ (\REFCNT A)
                                    2)
                                (EQ (\REFCNT C)
                                    0)))
                    (PROGN (RPLACA B (QUOTE FOO))
                           (AND (EQ (\REFCNT A)
                                    1)
                                (EQ (\REFCNT B)
                                    0)))
                    (PROGN (RPLACA C (QUOTE FUM))
                           (AND (EQ (\REFCNT A)
                                    0)
                                (EQ (\REFCNT C)
                                    0)))
                    (PROGN (RPLACD C (SETQ D (CONS)))
                           (EQ (\REFCNT D)
                               1))
                    (PROGN (RPLACD C (SETQ E (CONS)))
                           (AND (EQ (\REFCNT D)
                                    0)
                                (EQ (\REFCNT E)
                                    1)))
                    (PROGN (SETQ !GV1 NIL)
                           (EQ (\REFCNT !GV1)
                               1))
                    (PROGN (SETQ !GV1 E)
                           (EQ (\REFCNT E)
                               2))
                    (PROGN (SETQ !GV1 A)
                           (AND (EQ (\REFCNT E)
                                    1)
                                (EQ (\REFCNT A)
                                    1)))
                    (PROGN (SETQ !GV3 A)
                           (EQ (\REFCNT A)
                               2))
                    (PROGN (SETQ !GV2 C)
                           (EQ (\REFCNT C)
                               1])
```

## (!GCTEST2
```
  [LAMBDA NIL                                              (* JonL "16-Mar-84 14:03")
     (PROG ((A (CONS (QUOTE FOO)))
            (I 0)
```

```
          (REFARRAY (ARRAY 128 (QUOTE POINTER)
                          NIL 0)))
        [RPTQ 70 (MTCHECK (PROGN (SETA REFARRAY (add I 1)
                                        A)
                                 (EQ (\REFCNT A)
                                     I]
        (RPTQ 70 (MTCHECK (PROGN (SETA REFARRAY (PROG1 I (add I -1))
                                        NIL)
                                 (EQ (\REFCNT A)
                                     I))
```

## (**!GCTESTSETF**

```
  [LAMBDA NIL                                                  (* JonL "16-Mar-84 12:17")
    (PROG ((A1 (VAG2 57 290))
           (A2 (VAG2 58 290))
           (A3 (VAG2 56 290))
           (A4 (VAG2 55 290))
           (A5 (VAG2 54 290)))          (* 5 array pointers that will hash to same place)
```

(* (PROG ((STATE (for X in (QUOTE
(A1 A2 A3 A4 A5)) collect (LIST X 1))) FORMS FORM
BOX1STATE BOX2STATE) (FRPTQ 10
(FRPTQ 10 (SETQ VAR (CAR (NTH STATE
(RAND 1 5)))) (PROG NIL RETRY
(SELECTQ (RAND 1 4) (1 (COND
(BOX1STATE (COND ((ZEROP (CADR BOX1STATE))
(GO RETRY))) (add (CADR BOX1STATE) -1)))
(add (CADR VAR) 1) (SETQ BOX1STATE VAR)
(push FORMS (LIST (QUOTE SETQ)
(QUOTE !FVAR1) (CAR VAR)))) (2
(COND (BOX2STATE (COND ((ZEROP
(CADR BOX2STATE)) (GO RETRY)))
(add (CADR BOX2STATE) -1))) (add
(CADR VAR) 1) (SETQ BOX2STATE VAR)
(push FORMS (LIST (QUOTE SETQ)
(QUOTE !FVAR2) (CAR VAR)))) (3
(add (CADR VAR) 1) (push FORMS
(LIST (QUOTE \ADDREF) (CAR VAR))))
(PROGN (COND ((ZEROP (CADR VAR))
(GO RETRY))) (add (CADR VAR) -1)
(push FORMS (LIST (QUOTE \DELREF)
(CAR VAR))))))) (push FORMS (CONS
(QUOTE MTCHECK) (for X in STATE collect
(LIST (QUOTE EQ) (LIST (QUOTE \REFCNT)
(CAR X)) (CADR X)))))) (for X in STATE do
(COND ((ZEROP (CADR X)) (push FORMS
(LIST (QUOTE \ADDREF) (CAR X))))
(T (FRPTQ (SUB1 (CADR X)) (push FORMS
(LIST (QUOTE \DELREF) (CAR X)))))))
(RETURN (CONS (QUOTE PROGN)
(REVERSE FORMS)))))

```
           (MTCHECKSTK (\DELREF A3)
             (SETQ !FVAR2 A1)
             (SETQ !FVAR1 A3)
             (SETQ !FVAR2 A1)
             (SETQ !FVAR1 A1)
             (SETQ !FVAR2 A5)
             (\ADDREF A1)
             (SETQ !FVAR1 A2)
             (\DELREF A1)
             (\ADDREF A5)
             (MTCHECK (EQ (\REFCNT A1)
                          1)
                      (EQ (\REFCNT A2)
                          2)
                      (EQ (\REFCNT A3)
                          0)
                      (EQ (\REFCNT A4)
                          1)
                      (EQ (\REFCNT A5)
                          3))
             (SETQ !FVAR1 A5)
             (\ADDREF A4)
             (\ADDREF A2)
             (\ADDREF A5)
             (SETQ !FVAR2 A5)
             (SETQ !FVAR1 A4)
             (\ADDREF A3)
             (SETQ !FVAR1 A3)
             (SETQ !FVAR2 A2)
             (SETQ !FVAR2 A4)
             (MTCHECK (EQ (\REFCNT A1)
                          1)
                      (EQ (\REFCNT A2)
                          2)
                      (EQ (\REFCNT A3)
                          2)
```

```
                              (EQ (\REFCNT A4)
                                  3)
                              (EQ (\REFCNT A5)
                                  3))
                    (\ADDREF A5)
                    (SETQ !FVAR1 A2)
                    (SETQ !FVAR2 A4)
                    (SETQ !FVAR1 A5)
                    (SETQ !FVAR2 A5)
                    (\DELREF A1)
                    (SETQ !FVAR1 A1)
                    (\DELREF A1)
                    (\ADDREF A4)
                    (\DELREF A4)
                    (MTCHECK (EQ (\REFCNT A1)
                                 0)
                             (EQ (\REFCNT A2)
                                 2)
                             (EQ (\REFCNT A3)
                                 1)
                             (EQ (\REFCNT A4)
                                 2)
                             (EQ (\REFCNT A5)
                                 5))
                    (SETQ !FVAR2 A5)
                    (\DELREF A4)
                    (SETQ !FVAR2 A5)
                    (\DELREF A3)
                    (\ADDREF A1)
                    (SETQ !FVAR1 A1)
                    (SETQ !FVAR2 A5)
                    (SETQ !FVAR2 A3)
                    (\DELREF A1)
                    (\DELREF A2)
                    (MTCHECK (EQ (\REFCNT A1)
                                 0)
                             (EQ (\REFCNT A2)
                                 1)
                             (EQ (\REFCNT A3)
                                 1)
                             (EQ (\REFCNT A4)
                                 1)
                             (EQ (\REFCNT A5)
                                 4))
                    (SETQ !FVAR2 A1)
                    (SETQ !FVAR2 A4)
                    (\DELREF A4)
                    (\ADDREF A1)
                    (SETQ !FVAR1 A3)
                    (SETQ !FVAR1 A5)
                    (\ADDREF A3)
                    (\ADDREF A1)
                    (\ADDREF A4)
                    (SETQ !FVAR2 A3)
                    (MTCHECK (EQ (\REFCNT A1)
                                 1)
                             (EQ (\REFCNT A2)
                                 1)
                             (EQ (\REFCNT A3)
                                 2)
                             (EQ (\REFCNT A4)
                                 1)
                             (EQ (\REFCNT A5)
                                 5))
                    (SETQ !FVAR2 A2)
                    (SETQ !FVAR1 A3)
                    (\ADDREF A5)
                    (SETQ !FVAR2 A1)
                    (SETQ !FVAR2 A5)
                    (\DELREF A2)
                    (SETQ !FVAR2 A2)
                    (\DELREF A2)
                    (SETQ !FVAR1 A5)
                    (SETQ !FVAR1 A3)
                    (MTCHECK (EQ (\REFCNT A1)
                                 1)
                             (EQ (\REFCNT A2)
                                 0)
                             (EQ (\REFCNT A3)
                                 2)
                             (EQ (\REFCNT A4)
                                 1)
                             (EQ (\REFCNT A5)
                                 5))
                    (\ADDREF A1)
                    (\DELREF A1)
                    (\ADDREF A5)
```

```
                     (\ADDREF A5)
                     (SETQ !FVAR1 A5)
                     (SETQ !FVAR1 A4)
                     (SETQ !FVAR1 A4)
                     (SETQ !FVAR1 A2)
                     (SETQ !FVAR2 A2)
                     (\ADDREF A2)
                     (MTCHECK (EQ (\REFCNT A1)
                                  1)
                             (EQ (\REFCNT A2)
                                  2)
                             (EQ (\REFCNT A3)
                                  1)
                             (EQ (\REFCNT A4)
                                  1)
                             (EQ (\REFCNT A5)
                                  7))
                     (\DELREF A5)
                     (SETQ !FVAR2 A5)
                     (\ADDREF A2)
                     (\ADDREF A1)
                     (\DELREF A1)
                     (\ADDREF A5)
                     (SETQ !FVAR1 A3)
                     (\ADDREF A2)
                     (SETQ !FVAR1 A3)
                     (\ADDREF A4)
                     (MTCHECK (EQ (\REFCNT A1)
                                  1)
                             (EQ (\REFCNT A2)
                                  2)
                             (EQ (\REFCNT A3)
                                  2)
                             (EQ (\REFCNT A4)
                                  2)
                             (EQ (\REFCNT A5)
                                  8))
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                     (\DELREF A5)
                     (\DELREF A3)
                     (SETQ !FVAR2 A5)
                     (SETQ !FVAR1 A4)
                     (SETQ !FVAR1 A2)
                     (SETQ !FVAR1 A5)
                     (\DELREF A5)
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                     (SETQ !FVAR1 A2)
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                             (EQ (\REFCNT A2)
                                  4)
                             (EQ (\REFCNT A3)
                                  0)
                             (EQ (\REFCNT A4)
                                  2)
                             (EQ (\REFCNT A5)
                                  6))
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                     (SETQ !FVAR2 A5)
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                     (SETQ !FVAR1 A1)
                     (SETQ !FVAR2 A2)
                     (SETQ !FVAR2 A1)
                     (\ADDREF A5)
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                     (SETQ !FVAR1 A5)
                     (SETQ !FVAR2 A2)
                     (MTCHECK (EQ (\REFCNT A1)
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                             (EQ (\REFCNT A2)
                                  3)
                             (EQ (\REFCNT A3)
                                  0)
                             (EQ (\REFCNT A4)
                                  2)
                             (EQ (\REFCNT A5)
                                  7))
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                     (\DELREF A2)
                     (\ADDREF A3)
                     (\DELREF A4)
                     (\DELREF A5)
                     (\DELREF A5)
                     (\DELREF A5)
                     (\DELREF A5)
                     (\DELREF A5)
                     (\DELREF A5)
```

```
                        (SETQ.NOREF !FVAR1 NIL)
                        (SETQ.NOREF !FVAR2 NIL))
              (MTCHECKSTK (\DELREF A5)
                        (SETQ !FVAR1 A5)
                        (SETQ !FVAR2 A2)
                        (\ADDREF A1)
                        (SETQ !FVAR1 A2)
                        (\ADDREF A4)
                        (SETQ !FVAR1 A1)
                        (\DELREF A2)
                        (SETQ !FVAR2 A5)
                        (SETQ !FVAR1 A5)
                        (MTCHECK (EQ (\REFCNT A1)
                                     2)
                               (EQ (\REFCNT A2)
                                   0)
                               (EQ (\REFCNT A3)
                                   1)
                               (EQ (\REFCNT A4)
                                   2)
                               (EQ (\REFCNT A5)
                                   2))
                        (\ADDREF A4)
                        (\DELREF A3)
                        (\ADDREF A3)
                        (\ADDREF A2)
                        (SETQ !FVAR1 A4)
                        (\ADDREF A4)
                        (\DELREF A2)
                        (\ADDREF A3)
                        (SETQ !FVAR1 A2)
                        (\ADDREF A2)
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                                     2)
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                                   2)
                               (EQ (\REFCNT A3)
                                   2)
                               (EQ (\REFCNT A4)
                                   4)
                               (EQ (\REFCNT A5)
                                   1))
                        (SETQ !FVAR2 A1)
                        (SETQ !FVAR1 A3)
                        (SETQ !FVAR2 A1)
                        (SETQ !FVAR2 A3)
                        (SETQ !FVAR1 A2)
                        (SETQ !FVAR2 A4)
                        (\DELREF A2)
                        (SETQ !FVAR2 A2)
                        (SETQ !FVAR2 A5)
                        (SETQ !FVAR2 A4)
                        (MTCHECK (EQ (\REFCNT A1)
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                                   1)
                               (EQ (\REFCNT A3)
                                   2)
                               (EQ (\REFCNT A4)
                                   5)
                               (EQ (\REFCNT A5)
                                   0))
                        (\ADDREF A3)
                        (SETQ !FVAR2 A1)
                        (\DELREF A1)
                        (\ADDREF A5)
                        (\ADDREF A5)
                        (\ADDREF A4)
                        (SETQ !FVAR2 A4)
                        (SETQ !FVAR1 A5)
                        (\ADDREF A4)
                        (SETQ !FVAR2 A2)
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                               (EQ (\REFCNT A2)
                                   1)
                               (EQ (\REFCNT A3)
                                   3)
                               (EQ (\REFCNT A4)
                                   6)
                               (EQ (\REFCNT A5)
                                   3))
                        (SETQ !FVAR2 A2)
                        (\ADDREF A1)
                        (SETQ !FVAR1 A5)
                        (SETQ !FVAR1 A4)
                        (SETQ !FVAR2 A5)
```

```
                    (\DELREF A3)
                    (\ADDREF A3)
                    (SETQ !FVAR2 A5)
                    (SETQ !FVAR2 A4)
                    (\ADDREF A3)
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                                2)
                           (EQ (\REFCNT A2)
                                0)
                           (EQ (\REFCNT A3)
                                4)
                           (EQ (\REFCNT A4)
                                8)
                           (EQ (\REFCNT A5)
                                2))
                    (\DELREF A3)
                    (\ADDREF A4)
                    (\ADDREF A5)
                    (SETQ !FVAR2 A1)
                    (\ADDREF A1)
                    (\ADDREF A4)
                    (\ADDREF A2)
                    (\DELREF A4)
                    (SETQ !FVAR2 A2)
                    (\DELREF A2)
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                                3)
                           (EQ (\REFCNT A2)
                                1)
                           (EQ (\REFCNT A3)
                                3)
                           (EQ (\REFCNT A4)
                                8)
                           (EQ (\REFCNT A5)
                                3))
                    (SETQ !FVAR1 A2)
                    (SETQ !FVAR2 A1)
                    (SETQ !FVAR1 A5)
                    (SETQ !FVAR1 A3)
                    (\DELREF A3)
                    (SETQ !FVAR1 A1)
                    (\ADDREF A4)
                    (\ADDREF A4)
                    (\DELREF A3)
                    (SETQ !FVAR1 A1)
                    (MTCHECK (EQ (\REFCNT A1)
                                5)
                           (EQ (\REFCNT A2)
                                0)
                           (EQ (\REFCNT A3)
                                1)
                           (EQ (\REFCNT A4)
                                9)
                           (EQ (\REFCNT A5)
                                3))
                    (SETQ !FVAR2 A1)
                    (\ADDREF A4)
                    (SETQ !FVAR1 A3)
                    (SETQ !FVAR2 A3)
                    (SETQ !FVAR1 A2)
                    (SETQ !FVAR1 A1)
                    (SETQ !FVAR2 A2)
                    (SETQ !FVAR1 A5)
                    (SETQ !FVAR1 A5)
                    (SETQ !FVAR2 A5)
                    (MTCHECK (EQ (\REFCNT A1)
                                3)
                           (EQ (\REFCNT A2)
                                0)
                           (EQ (\REFCNT A3)
                                1)
                           (EQ (\REFCNT A4)
                                10)
                           (EQ (\REFCNT A5)
                                5))
                    (SETQ !FVAR1 A3)
                    (SETQ !FVAR2 A3)
                    (\ADDREF A2)
                    (SETQ !FVAR2 A5)
                    (\ADDREF A4)
                    (\DELREF A1)
                    (SETQ !FVAR1 A4)
                    (\DELREF A1)
                    (\DELREF A2)
                    (\ADDREF A5)
                    (MTCHECK (EQ (\REFCNT A1)
                                1)
```

```
                                (EQ (\REFCNT A2)
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                                (EQ (\REFCNT A3)
                                    1)
                                (EQ (\REFCNT A4)
                                    12)
                                (EQ (\REFCNT A5)
                                    5))
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                    (SETQ !FVAR1 A4)
                    (SETQ !FVAR1 A3)
                    (SETQ !FVAR2 A1)
                    (SETQ !FVAR1 A2)
                    (\ADDREF A4)
                    (\ADDREF A4)
                    (\ADDREF A4)
                    (\ADDREF A1)
                    (MTCHECK (EQ (\REFCNT A1)
                                 4)
                             (EQ (\REFCNT A2)
                                 1)
                             (EQ (\REFCNT A3)
                                 1)
                             (EQ (\REFCNT A4)
                                 14)
                             (EQ (\REFCNT A5)
                                 4))
                    (\DELREF A1)
                    (\DELREF A1)
                    (\DELREF A1)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A4)
                    (\DELREF A5)
                    (\DELREF A5)
                    (\DELREF A5)
                    (SETQ.NOREF !FVAR1 NIL)
                    (SETQ.NOREF !FVAR2 NIL])
```

(**!GCTESTSETG**
```
  [LAMBDA NIL
    (DECLARE (GLOBALVARS !GVAR1 !GVAR2))
    (PROG ((A1 (VAG2 57 290))
           (A2 (VAG2 58 290))
           (A3 (VAG2 56 290))
           (A4 (VAG2 55 290))
           (A5 (VAG2 54 290)))
```

(* JonL "16-Mar-84 12:17")

(* 5 array pointers that will hash to same place)
(* (PROG ((STATE (for X in (QUOTE
(A1 A2 A3 A4 A5)) collect (LIST X 1))) FORMS FORM
BOX1STATE BOX2STATE) (FRPTQ 10
(FRPTQ 10 (SETQ VAR (CAR (NTH STATE
(RAND 1 5)))) (PROG NIL RETRY
(SELECTQ (RAND 1 4) (1 (COND
(BOX1STATE (COND ((ZEROP (CADR BOX1STATE))
(GO RETRY))) (add (CADR BOX1STATE) -1)))
(add (CADR VAR) 1) (SETQ BOX1STATE VAR)
(push FORMS (LIST (QUOTE SETQ)
(QUOTE !GVAR1) (CAR VAR))))
(2 (COND (BOX2STATE (COND
((ZEROP (CADR BOX2STATE))
(GO RETRY))) (add (CADR BOX2STATE) -1)))
(add (CADR VAR) 1) (SETQ BOX2STATE VAR)
(push FORMS (LIST (QUOTE SETQ)
(QUOTE !GVAR2) (CAR VAR))))
(3 (add (CADR VAR) 1) (push FORMS
(LIST (QUOTE \ADDREF) (CAR VAR))))
(PROGN (COND ((ZEROP (CADR VAR))
(GO RETRY))) (add (CADR VAR) -1)
(push FORMS (LIST (QUOTE \DELREF)
(CAR VAR))))))) (push FORMS (CONS
(QUOTE MTCHECK) (for X in STATE collect
(LIST (QUOTE EQ) (LIST (QUOTE \REFCNT)
(CAR X)) (CADR X)))))) (for X in STATE do
(COND ((ZEROP (CADR X)) (push FORMS
(LIST (QUOTE \ADDREF) (CAR X))))
(T (FRPTQ (SUB1 (CADR X)) (push FORMS

```
                                                                      (LIST (QUOTE \DELREF) (CAR X)))))))
                                                                  (RETURN (CONS (QUOTE PROGN)
                                                                  (REVERSE FORMS)))))

          (MTCHECKSTK (SETQ !GVAR1 A4)
                  (\DELREF A2)
                  (SETQ !GVAR1 A4)
                  (\ADDREF A3)
                  (SETQ !GVAR1 A4)
                  (SETQ !GVAR2 A4)
                  (SETQ !GVAR2 A5)
                  (SETQ !GVAR1 A2)
                  (\DELREF A2)
                  (\DELREF A3)
                  (MTCHECK (EQ (\REFCNT A1)
                               1)
                          (EQ (\REFCNT A2)
                              0)
                          (EQ (\REFCNT A3)
                              1)
                          (EQ (\REFCNT A4)
                              1)
                          (EQ (\REFCNT A5)
                              2))
                  (\DELREF A3)
                  (SETQ !GVAR2 A1)
                  (\ADDREF A4)
                  (SETQ !GVAR2 A5)
                  (SETQ !GVAR2 A2)
                  (\ADDREF A3)
                  (SETQ !GVAR1 A2)
                  (\DELREF A4)
                  (\DELREF A1)
                  (\DELREF A4)
                  (MTCHECK (EQ (\REFCNT A1)
                               0)
                          (EQ (\REFCNT A2)
                              1)
                          (EQ (\REFCNT A3)
                              1)
                          (EQ (\REFCNT A4)
                              0)
                          (EQ (\REFCNT A5)
                              1))
                  (\DELREF A2)
                  (\ADDREF A2)
                  (\DELREF A3)
                  (\ADDREF A1)
                  (SETQ !GVAR2 A1)
                  (\ADDREF A5)
                  (SETQ !GVAR2 A4)
                  (\ADDREF A5)
                  (\ADDREF A5)
                  (\ADDREF A1)
                  (MTCHECK (EQ (\REFCNT A1)
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                          (EQ (\REFCNT A2)
                              0)
                          (EQ (\REFCNT A3)
                              0)
                          (EQ (\REFCNT A4)
                              1)
                          (EQ (\REFCNT A5)
                              4))
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                  (\ADDREF A5)
                  (SETQ !GVAR2 A5)
                  (\ADDREF A1)
                  (SETQ !GVAR2 A5)
                  (SETQ !GVAR2 A2)
                  (SETQ !GVAR1 A4)
                  (SETQ !GVAR1 A4)
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                              0)
                          (EQ (\REFCNT A3)
                              0)
                          (EQ (\REFCNT A4)
                              1)
                          (EQ (\REFCNT A5)
                              5))
                  (\DELREF A5)
                  (SETQ !GVAR1 A5)
                  (\ADDREF A4)
                  (\ADDREF A1)
```

```
                        (SETQ !GVAR1 A1)
                        (\DELREF A4)
                        (SETQ !GVAR1 A5)
                        (SETQ !GVAR1 A2)
                        (\ADDREF A3)
                        (SETQ !GVAR1 A1)
                        (MTCHECK (EQ (\REFCNT A1)
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                                 (EQ (\REFCNT A2)
                                     0)
                                 (EQ (\REFCNT A3)
                                     1)
                                 (EQ (\REFCNT A4)
                                     0)
                                 (EQ (\REFCNT A5)
                                     4))
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                        (SETQ !GVAR2 A4)
                        (SETQ !GVAR2 A3)
                        (SETQ !GVAR2 A2)
                        (\ADDREF A2)
                        (SETQ !GVAR2 A5)
                        (\ADDREF A4)
                        (\DELREF A2)
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                                 (EQ (\REFCNT A2)
                                     0)
                                 (EQ (\REFCNT A3)
                                     0)
                                 (EQ (\REFCNT A4)
                                     1)
                                 (EQ (\REFCNT A5)
                                     5))
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                        (SETQ !GVAR1 A4)
                        (\ADDREF A3)
                        (\DELREF A4)
                        (SETQ !GVAR1 A2)
                        (SETQ !GVAR2 A4)
                        (\DELREF A1)
                        (SETQ !GVAR1 A3)
                        (SETQ !GVAR2 A1)
                        (SETQ !GVAR2 A5)
                        (MTCHECK (EQ (\REFCNT A1)
                                     3)
                                 (EQ (\REFCNT A2)
                                     0)
                                 (EQ (\REFCNT A3)
                                     2)
                                 (EQ (\REFCNT A4)
                                     0)
                                 (EQ (\REFCNT A5)
                                     5))
                        (SETQ !GVAR2 A3)
                        (SETQ !GVAR1 A2)
                        (\ADDREF A1)
                        (\ADDREF A5)
                        (\ADDREF A2)
                        (\DELREF A5)
                        (\DELREF A2)
                        (\DELREF A1)
                        (\ADDREF A2)
                        (SETQ !GVAR2 A4)
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                                 (EQ (\REFCNT A2)
                                     2)
                                 (EQ (\REFCNT A3)
                                     1)
                                 (EQ (\REFCNT A4)
                                     1)
                                 (EQ (\REFCNT A5)
                                     4))
                        (\DELREF A1)
                        (\ADDREF A5)
                        (\DELREF A1)
                        (\DELREF A5)
                        (\DELREF A3)
                        (\ADDREF A3)
                        (SETQ !GVAR1 A1)
                        (SETQ !GVAR2 A2)
                        (\ADDREF A2)
                        (SETQ !GVAR2 A2)
                        (MTCHECK (EQ (\REFCNT A1)
```

```
                                        2)
                           (EQ (\REFCNT A2)
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                           (EQ (\REFCNT A3)
                               1)
                           (EQ (\REFCNT A4)
                               0)
                           (EQ (\REFCNT A5)
                               4))
                  (\ADDREF A3)
                  (\ADDREF A1)
                  (SETQ !GVAR2 A5)
                  (SETQ !GVAR1 A3)
                  (SETQ !GVAR2 A2)
                  (SETQ !GVAR1 A2)
                  (SETQ !GVAR2 A4)
                  (\DELREF A3)
                  (SETQ !GVAR2 A4)
                  (\DELREF A1)
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                           (EQ (\REFCNT A2)
                               3)
                           (EQ (\REFCNT A3)
                               1)
                           (EQ (\REFCNT A4)
                               1)
                           (EQ (\REFCNT A5)
                               4))
                  (\DELREF A2)
                  (\DELREF A2)
                  (\DELREF A5)
                  (\DELREF A5)
                  (\DELREF A5)
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                  (SETQ.NOREF !GVAR2 NIL))
         (MTCHECKSTK (\ADDREF A3)
                  (\DELREF A1)
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                  (SETQ !GVAR1 A2)
                  (SETQ !GVAR2 A2)
                  (\ADDREF A3)
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                  (\ADDREF A2)
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                               0)
                           (EQ (\REFCNT A2)
                               3)
                           (EQ (\REFCNT A3)
                               3)
                           (EQ (\REFCNT A4)
                               2)
                           (EQ (\REFCNT A5)
                               0))
                  (SETQ !GVAR1 A5)
                  (SETQ !GVAR2 A3)
                  (SETQ !GVAR1 A5)
                  (SETQ !GVAR1 A1)
                  (\DELREF A1)
                  (SETQ !GVAR2 A5)
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                  (SETQ !GVAR1 A1)
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                               2)
                           (EQ (\REFCNT A3)
                               3)
                           (EQ (\REFCNT A4)
                               1)
                           (EQ (\REFCNT A5)
                               1))
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                  (SETQ !GVAR1 A1)
                  (\ADDREF A5)
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                  (\DELREF A2)
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                  (\DELREF A4)
                  (SETQ !GVAR1 A5)
                  (\ADDREF A2)
                  (SETQ !GVAR1 A4)
                  (MTCHECK (EQ (\REFCNT A1)
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                                  0)
                        (EQ (\REFCNT A2)
                              2)
                        (EQ (\REFCNT A3)
                              3)
                        (EQ (\REFCNT A4)
                              1)
                        (EQ (\REFCNT A5)
                              2))
              (\DELREF A2)
              (\DELREF A4)
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              (\ADDREF A5)
              (\ADDREF A2)
              (\ADDREF A1)
              (SETQ !GVAR2 A3)
              (\ADDREF A5)
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                        (EQ (\REFCNT A2)
                              2)
                        (EQ (\REFCNT A3)
                              4)
                        (EQ (\REFCNT A4)
                              0)
                        (EQ (\REFCNT A5)
                              3))
              (\ADDREF A2)
              (\DELREF A5)
              (\ADDREF A1)
              (SETQ !GVAR2 A4)
              (SETQ !GVAR2 A2)
              (SETQ !GVAR2 A5)
              (\DELREF A3)
              (\ADDREF A2)
              (SETQ !GVAR2 A1)
              (\DELREF A5)
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                              4)
                        (EQ (\REFCNT A3)
                              2)
                        (EQ (\REFCNT A4)
                              0)
                        (EQ (\REFCNT A5)
                              1))
              (\DELREF A2)
              (SETQ !GVAR2 A2)
              (SETQ !GVAR2 A5)
              (\ADDREF A1)
              (SETQ !GVAR2 A2)
              (\DELREF A3)
              (\ADDREF A5)
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              (SETQ !GVAR2 A1)
              (SETQ !GVAR2 A1)
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                              3)
                        (EQ (\REFCNT A3)
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                        (EQ (\REFCNT A4)
                              0)
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                              2))
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              (\DELREF A1)
              (\ADDREF A3)
              (\DELREF A3)
              (SETQ !GVAR2 A2)
              (SETQ !GVAR2 A2)
              (\DELREF A2)
              (\DELREF A5)
              (\ADDREF A2)
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                        (EQ (\REFCNT A2)
                              4)
                        (EQ (\REFCNT A3)
                              1)
                        (EQ (\REFCNT A4)
                              0)
```

```
                              (EQ (\REFCNT A5)
                                  2))
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                    (\DELREF A1)
                    (\DELREF A5)
                    (SETQ !GVAR2 A1)
                    (SETQ !GVAR2 A2)
                    (\ADDREF A2)
                    (\ADDREF A4)
                    (SETQ !GVAR1 A4)
                    (SETQ !GVAR1 A5)
                    (\ADDREF A1)
                    (MTCHECK (EQ (\REFCNT A1)
                                 2)
                             (EQ (\REFCNT A2)
                                 5)
                             (EQ (\REFCNT A3)
                                 1)
                             (EQ (\REFCNT A4)
                                 0)
                             (EQ (\REFCNT A5)
                                 2))
                    (SETQ !GVAR1 A4)
                    (SETQ !GVAR1 A4)
                    (\DELREF A5)
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                    (SETQ !GVAR2 A1)
                    (SETQ !GVAR2 A2)
                    (\DELREF A5)
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                    (SETQ !GVAR2 A4)
                    (SETQ !GVAR2 A1)
                    (MTCHECK (EQ (\REFCNT A1)
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                             (EQ (\REFCNT A2)
                                 4)
                             (EQ (\REFCNT A3)
                                 1)
                             (EQ (\REFCNT A4)
                                 0)
                             (EQ (\REFCNT A5)
                                 0))
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                    (\ADDREF A4)
                    (SETQ !GVAR2 A4)
                    (SETQ !GVAR1 A4)
                    (SETQ !GVAR2 A5)
                    (\ADDREF A3)
                    (SETQ !GVAR1 A4)
                    (\DELREF A4)
                    (\ADDREF A1)
                    (\ADDREF A5)
                    (MTCHECK (EQ (\REFCNT A1)
                                 3)
                             (EQ (\REFCNT A2)
                                 4)
                             (EQ (\REFCNT A3)
                                 2)
                             (EQ (\REFCNT A4)
                                 1)
                             (EQ (\REFCNT A5)
                                 2))
                    (\DELREF A1)
                    (\DELREF A1)
                    (\DELREF A2)
                    (\DELREF A2)
                    (\DELREF A2)
                    (\DELREF A3)
                    (\DELREF A5)
                    (SETQ.NOREF !GVAR1 NIL)
                    (SETQ.NOREF !GVAR2 NIL])
)
```

;; Test of garbage collector

```
(DEFINEQ
```

(**MINILOGOUT**
```
  [LAMBDA NIL                                                                      (* bvm: "10-OCT-81 17:22")
```

          (* * This one works for hacking in the init.sysout)

```
    (\STOPDISPLAY)
    (LOGOUT0)
    (\STARTDISPLAY)
    (\DEVICEEVENT (QUOTE AFTERLOGOUT])
```

)

;; File MACROTESTAUX contains freevar and numeric tests

```
(DEFINEQ

(!CHARTEST
  [LAMBDA NIL                                                       (* edited: "18-Mar-86 20:47")
    (!STRPOSTEST)
    (!CHARFILETEST])


(!STRPOSTEST
  [LAMBDA NIL                                                       (* edited: "18-Mar-86 18:53")
    (if [NOT (AND (EQ 4 (STRPOSL (QUOTE (A B))
                                 "LKDA"))
                  (NULL (STRPOSL (QUOTE (A B))
                                 "LKDπ"))
                  (EQ 2 (STRPOSL (QUOTE (π A))
                                 "BπAASD;FKJ"))
                  (EQ 2 (STRPOSL (QUOTE (π))
                                 "BπAASD;FKJ"]
        then (HELP]))


(!CHARFILETEST
  [LAMBDA NIL                                                       (* edited: "18-Mar-86 20:56")
    (LET ((OUT (OPENSTREAM (QUOTE {CORE}FOO)
                           (QUOTE OUTPUT)))
          (PICODE (CHARCODE GREEK,PI)))
         (PRIN1 (QUOTE A)
                OUT)
         (PRIN1 (CHARACTER PICODE)
                OUT)
         (TERPRI OUT)
         (PRIN1 (CHARACTER PICODE)
                OUT)
         (TAB 3 NIL OUT)
         (PRIN1 (CHARACTER PICODE)
                OUT)
         (CLOSEF OUT)
         (SETQ IN (OPENSTREAM (QUOTE {CORE}FOO)
                              (QUOTE INPUT)))
         (for C in (BQUOTE (A π (\, (CHARACTER (CHARCODE EOL)))
                              π
                              (\, (CHARACTER (CHARCODE SPACE)))
                              (\, (CHARACTER (CHARCODE SPACE)))
                              π))
            do (if (NEQ C (READC IN))
                   then (HELP)))
         (CLOSEF IN)
         (DELFILE (QUOTE {CORE}FOO])

)

(DECLARE: DONTEVAL@LOAD DONTEVAL@COMPILE DOCOPY

(FILESLOAD MACROTESTAUX)
)
```

## FUNCTION INDEX

| | | | | |
|---|---|---|---|---|
| !APPENDTEST .......4 | !CHECKLSTARSETARG .6 | !COPY .............4 | !GCTEST2 ..........6 | !SMASH ............4 |
| !CHARFILETEST ....18 | !CKEQ .............2 | !DIAGNOSE .........2 | !GCTESTSETF .......7 | !STRPOSTEST ......18 |
| !CHARTEST ........18 | !CKFEQ ............2 | !DIAGNOSELP .......2 | !GCTESTSETG ......12 | MINILOGOUT .......17 |
| !CHECKARGS ........5 | !CKFUZZYEQ ........2 | !GCTEST ...........6 | !INTERPTEST .......4 | |
| !CHECKLSTARARG ....6 | !CONSTEST .........3 | !GCTEST1 ..........6 | !MRAID ............2 | |

## MACRO INDEX

CKEQ ........1   CKFEQ .......1   CKFUZZYEQ ...1   MTCHECK .....1   MTCHECK1 ....1   MTCHECKSTK ..1   MTHELP ......1

## VARIABLE INDEX

!MTALLOWINEXACTFLG ...............2     !MTUSERAIDFLG ...................2     ERRORMESSAGESTREAM ...............2