```
MMM        MMM  TTTTTTTTTTTTTTT  HHH         HHH  RRRRRRRRRRRR    TTTTTTTTTTTTTTT  LLL
MMM        MMM  TTTTTTTTTTTTTTT  HHH         HHH  RRRRRRRRRRRR    TTTTTTTTTTTTTTT  LLL
MMM        MMM  TTTTTTTTTTTTTTT  HHH         HHH  RRRRRRRRRRRR    TTTTTTTTTTTTTTT  LLL
MMMMMM  MMMMMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMMMMM  MMMMMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMMMMM  MMMMMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMM  MMM   MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMM  MMM   MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMM  MMM   MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMM        MMM        TTT        HHHHHHHHHHHHHHH  RRRRRRRRRRRR          TTT        LLL
MMM        MMM        TTT        HHHHHHHHHHHHHHH  RRRRRRRRRRRR          TTT        LLL
MMM        MMM        TTT        HHH         HHH  RRR   RRR            TTT        LLL
MMM        MMM        TTT        HHH         HHH  RRR    RRR           TTT        LLL
MMM        MMM        TTT        HHH         HHH  RRR     RRR          TTT        LLL
MMM        MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMM        MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLL
MMM        MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLLLLLLLLLLLLLL
MMM        MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLLLLLLLLLLLLLL
MMM        MMM        TTT        HHH         HHH  RRR        RRR        TTT        LLLLLLLLLLLLLLL
```

FILEID**MTHININT

```
MM      MM   TTTTTTTTTT   HH      HH   IIIIII   NN      NN   IIIIII   NN      NN   TTTTTTTTTT
MM      MM   TTTTTTTTTT   HH      HH   IIIIII   NN      NN   IIIIII   NN      NN   TTTTTTTTTT
MMMM  MMMM       TT       HH      HH     II     NN      NN     II     NN      NN       TT
MMMM  MMMM       TT       HH      HH     II     NN      NN     II     NN      NN       TT
MM  MM  MM       TT       HH      HH     II     NNNN    NN     II     NNNN    NN       TT
MM  MM  MM       TT       HH      HH     II     NNNN    NN     II     NNNN    NN       TT
MM      MM       TT       HHHHHHHHHH     II     NN  NN  NN     II     NN  NN  NN       TT
MM      MM       TT       HHHHHHHHHH     II     NN  NN  NN     II     NN  NN  NN       TT
MM      MM       TT       HH      HH     II     NN    NNNN     II     NN    NNNN       TT
MM      MM       TT       HH      HH     II     NN    NNNN     II     NN    NNNN       TT
MM      MM       TT       HH      HH     II     NN      NN     II     NN      NN       TT
MM      MM       TT       HH      HH     II     NN      NN     II     NN      NN       TT
MM      MM       TT       HH      HH   IIIIII   NN      NN   IIIIII   NN      NN       TT
MM      MM       TT       HH      HH   IIIIII   NN      NN   IIIIII   NN      NN       TT


LL                IIIIII      SSSSSSSS
LL                IIIIII      SSSSSSSS
LL                  II      SS
LL                  II      SS
LL                  II      SS
LL                  II        SSSSSS
LL                  II        SSSSSS
LL                  II              SS
LL                  II              SS
LL                  II              SS
LL                  II              SS
LLLLLLLLL         IIIIII      SSSSSSSS
LLLLLLLLL         IIIIII      SSSSSSSS
```

```
0000    1          .TITLE  MTH$ININT - Nearest Integer
0000    2          .IDENT  /2-001/          ; File: MTHININT.MAR
0000    3
0000    4
0000    5  ;********************************************************************
0000    6  ;*                                                                  *
0000    7  ;*   COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                        *
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0000   23  ;*   SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.         *
0000   24  ;*                                                                  *
0000   25  ;*                                                                  *
0000   26  ;********************************************************************
0000   27
0000   28  ;
0000   29  ; FACILITY: MATH LIBRARY
0000   30  ;++
0000   31  ; ABSTRACT:
0000   32  ;
0000   33  ;
0000   34  ;--
0000   35  ;
0000   36  ; VERSION: 1
0000   37  ;
0000   38  ; HISTORY:
0000   39  ;
0000   40  ; AUTHOR:
0000   41  ;       Jonathan M. Taylor, 28-Jul-77: Version 0
0000   42  ;
0000   43  ; MODIFIED BY:
0000   44  ;
0000   45  ;       Steven B. Lionel, 19-Feb-1979: Version 2
0000   46  ;
0000   47  ;
```

```
0000    49              .SBTTL  HISTORY          ; Detailed Current Edit History
0000    50
0000    51
0000    52  ; Edit History for Version 1 of MTH$ININT
0000    53  ;
0000    54  ; 0-2   – Remove MTH$FLAG_JACKET.  TNH 5-July-78
0000    55  ; 1-001 – Update version number and copyright notice.  JBS 16-NOV-78
0000    56  ; 1-002 – Add " " to the PSECT directive.  JBS 22-DEC-78
0000    57  ; 1-003 – Add IV to entry mask.  SBL 06-Feb-79
0000    58  ; 2-001 – Use CVTRFL.  SBL 19-Feb-79
```

```
        0000        60                .SBTTL   DECLARATIONS
        0000        61
        0000        62    ;
        0000        63    ; INCLUDE FILES:
        0000        64    ;
        0000        65
        0000        66    ;
        0000        67    ; EXTERNAL SYMBOLS:
        0000        68    ;
        0000        69
        0000        70    ;
        0000        71    ; MACROS:
        0000        72    ;
        0000        73
        0000        74
        0000        75    ; PSECT DECLARATIONS:
00000000        76                .PSECT   _MTH$CODE          PIC, SHR, LONG, EXE, NOWRT
        0000        77
        0000        78    ;
        0000        79    ; EQUATED SYMBOLS:
        0000        80    ;
        0000        81
        0000        82    ;
        0000        83    ; OWN STORAGE:
        0000        84    ;
```

MTHSININT   D 2
2-001
                        - Nearest Integer   16-SEP-1984 01:43:56   VAX/VMS Macro V04-00   Page 4
                        MTHSININT - return nearest integer as IN 6-SEP-1984 11:26:18 [MTHRTL.SRC]MTHININT.MAR;1   (4)

MT
1-

```
                        0000      86              .SBTTL  MTHSININT - return nearest integer as INTEGER*2
                        0000      87
                        0000      88  ;++
                        0000      89  ; FUNCTIONAL DESCRIPTION:
                        0000      90  ;
                        0000      91  ;       MTHSININT returns as its function value the nearest INTEGER*2
                        0000      92  ;       integer to its REAL*4 argument, rounded away from zero.
                        0000      93  ;
                        0000      94  ; CALLING SEQUENCE:
                        0000      95  ;       nearest_integer.ww.v = MTHSININT (arg.rf.r)
                        0000      96  ;
                        0000      97  ;
                        0000      98  ; INPUT PARAMETERS:
                        0000      99  ;       arg      - REAL*4 argument
                        0000     100  ;
                        0000     101  ; IMPLICIT INPUTS:
                        0000     102  ;       NONE
                        0000     103  ;
                        0000     104  ; OUTPUT PARAMETERS:
                        0000     105  ;       NONE
                        0000     106  ;
                        0000     107  ; IMPLICIT OUTPUTS:
                        0000     108  ;       NONE
                        0000     109  ;
                        0000     110  ; FUNCTION VALUE:
                        0000     111  ;       nearest_integer - trunc(arg + .5*sign(arg))
                        0000     112  ;
                        0000     113  ; SIDE EFFECTS:
                        0000     114  ;       Reserved operand, integer overflow exceptions possible.
                        0000     115  ;
                        0000     116  ;--
                        0000     117
                        0000     118
                 4000   0000     119              .ENTRY  MTHSININT,          ^M<IV>
   50   04 BC    4B     0002     120              CVTRFL  @4(AP), R0                    ; R0 gets rounded argument
      50   50    F7     0006     121              CVTLW   R0, R0                        ; convert to INTEGER*2
               04       0009     122              RET
                        000A     123
                        000A     124
                        000A     125              .END
```

MTH$ININT   00000000 RG   01

```
                              +------------------+
                              ! Psect synopsis !
                              +------------------+


PSECT name                    Allocation          PSECT No.  Attributes
----------                    ----------          ---------  ----------
.  ABS  .                     00000000 (    0.)   00 (  0.)  NOPIC  USR   CON   ABS   LCL NOSHR NOEXE NORD  NOWRT NOVEC BYTE
_MTH$CODE                     0000000A (   10.)   01 (  1.)         PIC   USR   CON   REL   LCL   SHR   EXE   RD  NOWRT NOVEC LONG

                         +----------------------------+
                         ! Performance indicators !
                         +----------------------------+


Phase                    Page faults    CPU Time       Elapsed Time
-----                    -----------    --------       ------------
Initialization                   29     00:00:00.08    00:00:01.22
Command processing              114     00:00:00.46    00:00:03.60
Pass 1                           63     00:00:00.38    00:00:02.26
Symbol table sort                 0     00:00:00.00    00:00:00.00
Pass 2                           37     00:00:00.28    00:00:01.17
Symbol table output               1     00:00:00.01    00:00:00.01
Psect synopsis output             2     00:00:00.02    00:00:00.02
Cross-reference output            0     00:00:00.00    00:00:00.00
Assembler run totals            248     00:00:01.24    00:00:08.29
```

The working set limit was 750 pages.
1191 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 1 non-local and 0 local symbols.
125 source lines were read in Pass 1, producing 10 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

```
                         +----------------------------+
                         ! Macro library statistics !
                         +----------------------------+


Macro library name                      Macros defined
------------------                      --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2              0
```

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:MTHININT/OBJ=OBJ$:MTHININT MSRC$:MTHININT/UPDATE=(ENH$:MTHININT)

MTHJMIN0
LIS

MTHMSG
LIS

MTHIMIN0
LIS

MTHMAX1
LIS

MTHJIDNNT
LIS

MTHMSGDEF
LIS

MTHJIHNNT
LIS

MTHSGN
LIS

MTHJMAX0
LIS

MTHMOD
LIS

MTHSIGNAL
LIS

MTHSQRTR2
LIS

MTHJNINT
LIS

MTHSINCOS
LIS

MTHSQRT
LIS

MTHININT
LIS

MTHRANDOM
LIS

MTHJIGNNT
LIS

MTHMIN1
LIS

MTHJISIGN
LIS

MTHSIGN
LIS

MTHSINH
LIS