```
MMM          MMM  TTTTTTTTTTTTTTT   HHH          HHH  RRRRRRRRRRR     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         HHHHHHHHHHHHHHHH  RRRRRRRRRRR           TTT         LLL
MMM         MMM         TTT         HHHHHHHHHHHHHHHH  RRRRRRRRRRRR          TTT         LLL
MMM         MMM         TTT         HHHHHHHHHHHHHHHH  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         LLL
MMM         MMM         TTT         HHH          HHH  RRR         RRR       TTT         LLLLLLLLLLLLLLLL
MMM         MMM         TTT         HHH          HHH  RRR         RRR       TTT         LLLLLLLLLLLLLLLL
MMM         MMM         TTT         HHH          HHH  RRR         RRR       TTT         LLLLLLLLLLLLLLLL
```

```
MM      MM  TTTTTTTTTT  HH      HH  DDDDDDDD    NN      NN    IIIIII    NN      NN  TTTTTTTTTT
MM      MM  TTTTTTTTTT  HH      HH  DDDDDDDD    NN      NN    IIIIII    NN      NN  TTTTTTTTTT
MMMM  MMMM      TT      HH      HH  DD      DD  NN      NN      II      NN      NN      TT
MMMM  MMMM      TT      HH      HH  DD      DD  NN      NN      II      NN      NN      TT
MM  MM  MM      TT      HH      HH  DD      DD  NNNN    NN      II      NNNN    NN      TT
MM  MM  MM      TT      HH      HH  DD      DD  NNNN    NN      II      NNNN    NN      TT
MM      MM      TT      HHHHHHHHHH  DD      DD  NN  NN  NN      II      NN  NN  NN      TT
MM      MM      TT      HHHHHHHHHH  DD      DD  NN  NN  NN      II      NN  NN  NN      TT
MM      MM      TT      HH      HH  DD      DD  NN    NNNN      II      NN    NNNN      TT
MM      MM      TT      HH      HH  DD      DD  NN    NNNN      II      NN    NNNN      TT
MM      MM      TT      HH      HH  DD      DD  NN      NN      II      NN      NN      TT          ....
MM      MM      TT      HH      HH  DD      DD  NN      NN      II      NN      NN      TT          ....
MM      MM      TT      HH      HH  DDDDDDDD    NN      NN    IIIIII    NN      NN      TT          ....
MM      MM      TT      HH      HH  DDDDDDDD    NN      NN    IIIIII    NN      NN      TT          ....

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
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
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

Table of contents

```
0000     1          .TITLE  MTH$DNINT  - Nearest Integer
0000     2          .IDENT  /1-003/          ; File: MTHDNINT.MAR
0000     3
0000     4 ;
0000     5 ;*****************************************************************************
0000     6 ;*                                                                           *
0000     7 ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
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0000    24 ;*                                                                           *
0000    25 ;*                                                                           *
0000    26 ;*****************************************************************************
0000    27 ;
0000    28 ;
0000    29 ; FACILITY: MATH LIBRARY
0000    30 ;++
0000    31 ; ABSTRACT:
0000    32 ;       This module contains routine MTH$DNINT:
0000    33 ;       Return the rounded double-precision floating-point argument.
0000    34 ;
0000    35 ;
0000    36 ;--
0000    37 ;
0000    38 ; VERSION: 1
0000    39 ;
0000    40 ; HISTORY:
0000    41 ;
0000    42 ; AUTHOR:
0000    43 ;       Jonathan M. Taylor, 28-Jul-77: Version 0
0000    44 ;
0000    45 ; MODIFIED BY:
0000    46 ;
0000    47 ;
0000    48 ;
```

```
0000     50          .SBTTL  HISTORY         ; Detailed Current Edit History
0000     51
0000     52
0000     53 ; Edit History for Version 1 of MTH$DNINT
0000     54 ;
0000     55 ; 0-3   - Remove MTH$FLAG_JACKET.  TNH 5-July-78
0000     56 ; 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
0000     57 ; 1-002 - Add "." to PSECT directive.  JBS 22-DEC-78
0000     58 ; 1-003 - Make it work.  SBL 05-Feb-79
```

```
                        .SBTTL  DECLARATIONS

;
; INCLUDE FILES:
;       NONE
;

;
; EXTERNAL SYMBOLS:
;       NONE
;

;
; MACROS:
;       NONE
;

;
; PSECT DECLARATIONS:
;       .PSECT  _MTH$CODE       PIC, SHR, LONG, EXE, NOWRT

;
; EQUATED SYMBOLS:
;       NONE
;

;
; OWN STORAGE:
;       NONE
;
```

```
                        0000     91          .SBTTL  MTH$DNINT - return nearest integer as REAL*8
                        0000     92
                        0000     93 ;++
                        0000     94 ; FUNCTIONAL DESCRIPTION:
                        0000     95 ;       Returns the rounded (away from zero) argument.
                        0000     96 ;
                        0000     97 ;
                        0000     98 ; CALLING SEQUENCE:
                        0000     99 ;       NONE
                        0000    100 ;       Nearest_integer.wd.v = MTH$DNINT (arg.rd.r)
                        0000    101 ;
                        0000    102 ;
                        0000    103 ; INPUT PARAMETERS:
                        0000    104 ;       The input parameter is a double-precision floating-point value
                        0000    105 ;       and is call-by-reference.
                        0000    106 ;
                        0000    107 ;
                        0000    108 ; IMPLICIT INPUTS:
                        0000    109 ;       NONE
                        0000    110 ;
                        0000    111 ; OUTPUT PARAMETERS:
                        0000    112 ;       NONE
                        0000    113 ;
                        0000    114 ; IMPLICIT OUTPUTS:
                        0000    115 ;       NONE
                        0000    116 ;
                        0000    117 ; COMPLETION CODES:
                        0000    118 ;       NONE
                        0000    119 ;
                        0000    120 ; SIDE EFFECTS:
                        0000    121 ;       Reserved Operand and Floating Overflow exceptions can occur.
                        0000    122 ;
                        0000    123 ;
                        0000    124 ;--
                        0000    125
                        0000    126
                        0000    127
                   000C 0000    128          .ENTRY  MTH$DNINT,      ^M<R2, R3>
        50   04 BC   00   61 0002    129          ADDD3   #0.5, @4(AP), R0        ; R0/R1 = arg + 0.5
                     03   14 0007    130          BGTR    1$                      ; branch if positive
                50   08   62 0009    131          SUBD    #1.0, R0                ; R0/R1 = arg - 0.5
52  52   08  00   50   74 000C    132 1$:      EMODD   R0, #0, #1, R2, R2      ; R2/R3 = fraction_part(R0/R1)
                50   52   62 0012    133          SUBD2   R2, R0                  ; R0/R1 = integer_part(R0/R1)
                          04 0015    134          RET
                             0016    135
                             0016    136
                             0016    137          .END
```

MTH$DNINT 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	00000016 (22.)	01 (1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.09	00:00:01.18
Command processing	106	00:00:00.46	00:00:03.45
Pass 1	77	00:00:00.37	00:00:01.73
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	39	00:00:00.31	00:00:01.54
Symbol table output	1	00:00:00.01	00:00:00.01
Psect synopsis output	3	00:00:00.02	00:00:00.14
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	257	00:00:01.27	00:00:08.05

The working set limit was 900 pages.
1410 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 1 local symbols.
137 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
_255DUA28:[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$:MTHDNINT/OBJ=OBJ$:MTHDNINT MSRC$:MTHDNINT/UPDATE=(ENH$:MTHDNINT)

MTHDCOSH LIS

MTHDMIN LIS

MTHDLOG LIS

MTHDSINCO LIS

MTHDATANH LIS

MTHDNINT LIS

MTHDSQRT LIS

MTHDCONJG LIS

MTHDINT LIS

MTHDMAX1 LIS

MTHDSIGN LIS

MTHDIM LIS

MTHDMOD LIS

MTHDSINH LIS

MTHDEXP LIS

MTHDFLOOR LIS

MTHDPROD LIS