



```

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

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MA

(2)	49	HISTORY	; Detailed Current Edit History
(3)	60	DECLARATIONS	
(4)	86	MTH\$JIDNNT	- return nearest integer as INTEGER*4

```

0000 1 .TITLE MTHSJIDNNT - Nearest Integer
0000 2 .IDENT /2-001/ ; File: MTHJIDNNT.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-79: Version 2
0000 46 :
0000 47 :

```

MTHSJIDNNT  
2-001

I 2  
- Nearest Integer 16-SEP-1984 01:44:16 VAX/VMS Macro V04-00 Page 2  
HISTORY ; Detailed Current Edit History 6-SEP-1984 11:26:23 [MTHRTL.SRC]MTHJIDNNT.MAR;1 (2)

0000 49 .SBTTL HISTORY ; Detailed Current Edit History  
0000 50  
0000 51  
0000 52 ; Edit History for Version 1 of MTHSJIDNNT  
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 CVTRDL. SBL 19-Feb-79

MT  
1-

```
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:
0000 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 :
```

MTH\$JIDNNT - return nearest integer as I

```

0000 86      .SBTTL MTH$JIDNNT - return nearest integer as INTEGER*4
0000 87
0000 88      :++
0000 89      : FUNCTIONAL DESCRIPTION:
0000 90      :
0000 91      : MTH$JIDNNT returns as its function value the INTEGER*4
0000 92      : integer nearest to its REAL*8 argument, rounded away from zero.
0000 93      :
0000 94      : CALLING SEQUENCE:
0000 95      : nearest_integer.wl.v = MTH$JIDNNT (arg.rd.r)
0000 96      :
0000 97      :
0000 98      : INPUT PARAMETERS:
0000 99      : arg      - REAL*8 argument
0000 100     :
0000 101     : IMPLICIT INPUTS:
0000 102     : NONE
0000 103     :
0000 104     : OUTPUT PARAMETERS:
0000 105     : NONE
0000 106     :
0000 107     : IMPLICIT OUTPUTS:
0000 108     : NONE
0000 109     :
0000 110     : FUNCTION VALUE:
0000 111     : nearest_integer - trunc(arg + .5*sign(arg))
0000 112     :
0000 113     : SIDE EFFECTS:
0000 114     : Reserved operand and integer overflow can occur.
0000 115     :
0000 116     :--
0000 117
0000 118
0000 119
0000 120     .ENTRY MTH$JIDNNT,      ^M<IV>
0000 121     CVTRDL @4(AP), R0      ; R0 gets rounded argument
0000 122     RET
0000 123
0000 124
0000 125     .END

```

50 04 BC 4000  
6B  
04

MTHSJIDNNT  
Symbol table

- Nearest Integer

L 2

16-SEP-1984 01:44:16  
6-SEP-1984 11:26:23

VAX/VMS Macro V04-00  
[MTHRTL.SRC]MTHJIDNNT.MAR;1

Page 5  
(4)

MTHSJIDNNT 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	00000007 ( 7.)	01 ( 1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

↑-----↑  
! Performance indicators !  
↑-----↑

Phase	Page faults	CPU Time	Elapsed Time
Initialization	35	00:00:00.09	00:00:01.32
Command processing	122	00:00:00.50	00:00:04.70
Pass 1	70	00:00:00.35	00:00:02.38
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	37	00:00:00.25	00:00:00.98
Symbol table output	2	00:00:00.01	00:00:00.21
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	270	00:00:01.24	00:00:09.66

The working set limit was 750 pages.  
1165 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\$:MTHJIDNNT/OBJ=OBJ\$:MTHJIDNNT MSRC\$:MTHJIDNNT/UPDATE=(ENH\$:MTHJIDNNT)



MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHMINO LIS	MTHTIME LIS	MTHTIME LIS	MTHMSG LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHMAXI LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHJIDMNT LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHMSGDEF LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHJIDMNT LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSGN LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHJIDMNT LIS	MTHTIME LIS	MTHMAXO LIS	MTHTIME LIS	MTHMOD LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSQRTR2 LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSIGNAL LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSINOS LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSORT LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHININT LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHJININT LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHRANDOM LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHJIGNNT LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHMINI LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS
MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHJISGN LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSIGN LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHTIME LIS	MTHSIGN LIS	MTHTIME LIS	MTHTIME LIS