

| | | | | | | | | | | | |
|------|------|------------|------------|----|----------|--------|----|--------|------|------|------------|
| MM | MM | TTTTTTTTTT | HH | HH | GGGGGGGG | NN | NN | IIIIII | NN | NN | TTTTTTTTTT |
| MM | MM | TTTTTTTTTT | HH | HH | GGGGGGGG | NN | NN | IIIIII | NN | NN | TTTTTTTTTT |
| MMMM | MMMM | TT | HH | HH | GG | NN | NN | II | NN | NN | TT |
| MMMM | MMMM | TT | HH | HH | GG | NN | NN | II | NN | NN | TT |
| MM | MM | TT | HH | HH | GG | NNNN | NN | II | NNNN | NN | TT |
| MM | MM | TT | HH | HH | GG | NNNN | NN | II | NNNN | NN | TT |
| MM | MM | TT | HHHHHHHHHH | HH | GG | NN | NN | II | NN | NN | TT |
| MM | MM | TT | HHHHHHHHHH | HH | GG | NN | NN | II | NN | NN | TT |
| MM | MM | TT | HH | HH | GG | GGGGGG | NN | II | NN | NNNN | TT |
| MM | MM | TT | HH | HH | GG | GGGGGG | NN | II | NN | NNNN | TT |
| MM | MM | TT | HH | HH | GG | GG | NN | II | NN | NN | TT |
| MM | MM | TT | HH | HH | GG | GG | NN | II | NN | NN | TT |
| MM | MM | TT | HH | HH | GG | GG | NN | II | NN | NN | TT |
| MM | MM | TT | HH | HH | GG | GGGGGG | NN | IIIIII | NN | NN | TT |
| MM | MM | TT | HH | HH | GGGGGG | 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 |
| LLLLLLLLLLLL | IIIIII | SSSSSSSS |
| LLLLLLLLLLLL | IIIIII | SSSSSSSS |

MTH\$GNINT
Table of contents

- Nearest Integer

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HISTORY ; Detailed Current Edit History
DECLARATIONS
MTH\$GNINT - return nearest integer as G REAL*8

```

0000 1      .TITLE MTH$GNINT - Nearest Integer
0000 2      .IDENT /1-001/           ; File: MTHGNINT.MAR
0000 3
0000 4
0000 5 :*****
0000 6 :*
0000 7 :*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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0000 23 :*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0000 24 :*
0000 25 :*
0000 26 :*****
0000 27
0000 28
0000 29 : FACILITY: MATH LIBRARY
0000 30 :++
0000 31 : ABSTRACT:
0000 32 :   This module contains routine MTH$GNINT:
0000 33 :   Return the rounded G 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 :   Steven B. Lionel, 26-Jan-1979: Version 1
0000 44
0000 45 : MODIFIED By:
0000 46
0000 47
0000 48

```

MTH\$GNINT
1-001

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HISTORY ; Detailed Current Edit History 6-SEP-1984 11:23:56 [MTHRTL.SRC]MTH\$GNINT.MAR;1 (2)

0000 50 .SBTTL HISTORY ; Detailed Current Edit History
0000 51
0000 52
0000 53 ; Edit History for Version 1 of MTH\$GNINT
0000 54 ;
0000 55 ; 1-001 - Adapted from MTH\$DNINT version 1-001. SBL 26-Jan-1979

MT
1-

```
0000 57      .SBTTL DECLARATIONS
0000 58
0000 59 :
0000 60 : INCLUDE FILES:
0000 61 :     NONE
0000 62 :
0000 63 :
0000 64 :
0000 65 : EXTERNAL SYMBOLS:
0000 66 :     NONE
0000 67 :
0000 68 :
0000 69 :
0000 70 : MACROS:
0000 71 :     NONE
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 :     NONE
0000 81 :
0000 82 :
0000 83 :
0000 84 : OWN STORAGE:
0000 85 :     NONE
0000 86 :
```

```

0000 88      .SBTTL MTH$GNINT - return nearest integer as G REAL*8
0000 89
0000 90      :++
0000 91      : FUNCTIONAL DESCRIPTION:
0000 92      : Returns the rounded (away from zero) argument.
0000 93      :
0000 94      :
0000 95      : CALLING SEQUENCE:
0000 96      :
0000 97      : Nearest_integer.wg.v = MTH$GNINT (arg.rg.r)
0000 98      :
0000 99      :
0000 100     : INPUT PARAMETERS:
0000 101     : The input parameter is a G floating-point value
0000 102     : and is call-by-reference.
0000 103     :
0000 104     :
0000 105     : IMPLICIT INPUTS:
0000 106     : NONE
0000 107     :
0000 108     : OUTPUT PARAMETERS:
0000 109     : NONE
0000 110     :
0000 111     : IMPLICIT OUTPUTS:
0000 112     : NONE
0000 113     :
0000 114     : COMPLETION CODES:
0000 115     : NONE
0000 116     :
0000 117     : SIDE EFFECTS:
0000 118     : Reserved Operand and Floating Overflow exceptions can occur.
0000 119     :
0000 120     :
0000 121     :--
0000 122
0000 123
0000 124
0000 125     .ENTRY MTH$GNINT, ^M<R2, R3>
50 04 BC 00 000C 000J 126     ADDG3 #0.5, @4(AP), R0 ; R0/R1 = arg + 0.5
04 14 0008 127     BGTR 1$ ; branch if positive
08 50 000A 128     SUBG2 #1.0, R0 ; R0/R1 = arg - 0.5
52 52 08 00 50 54FD 000E 129 1$: EMODG R0, #0, #1, R2, R2 ; R2/R3 = fraction_part(R0/R1)
50 52 42FD 0015 130     SUBG2 R2, R0 ; R0/R1 = integer_part(R0)
04 0019 131     RET
001A 132
001A 133
001A 134     .END

```

MTH\$GNINT
Symbol table

- Nearest Integer

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6-SEP-1984 11:23:56 [M\$HRTL.SRC]MTHGNINT.MAR;1

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MTH\$GNINT 00000000 RG 01

! Psect synopsis !

| PSECT name | Allocation | PSECT No. | Attributes |
|------------|-----------------|-----------|--|
| ABS | 00000000 (0.) | 00 (0.) | NOPIC USR CON ABS LCL NOSHR NOZEYE NORD NOWRT NOVEC BYTE |
| MTH\$CODE | 0000001A (26.) | 01 (1.) | PIC USR CON REL LCL SHR EXC RD NOWRT NOVEC LONG |

! Performance indicators !

| Phase | Page faults | CPU Time | Elapsed Time |
|------------------------|-------------|-------------|--------------|
| Initialization | 29 | 00:00:00.07 | 00:00:01.10 |
| Command processing | 116 | 00:00:00.55 | 00:00:02.70 |
| Pass 1 | 76 | 00:00:00.38 | 00:00:01.35 |
| Symbol table sort | 0 | 00:00:00.00 | 00:00:00.00 |
| Pass 2 | 37 | 00:00:00.33 | 00:00:01.29 |
| Symbol table output | 2 | 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 | 264 | 00:00:01.36 | 00:00:06.47 |

The working set limit was 900 pages.
 1386 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.
 134 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\$:MTHGNINT/OBJ=OBJ\$:MTHGNINT MSRC\$:MTHGNINT/UPDATE=(ENH\$:MTHGNINT)

| | | |
|---------------|--------------|--------------|
| MTHGCONJ LIS | MTHGINT LIS | MTHGMOD LIS |
| MTHEXP LIS | MTHFLOOR LIS | MTHGEXP LIS |
| MTHDTAN LIS | MTHDTANH LIS | MTHGMINI LIS |
| MTHGCOSH LIS | MTHGLOG LIS | MTHGACOS LIS |
| MTHGASTN LIS | MTHGINT LIS | MTHGATAN LIS |
| MTHGATANH LIS | MTHGMAXI LIS | |

