```
(FILECREATED "11-Aug-88 21:29:48" <AFFIRM>INTEGER..16 17468

     changes to:  INTEGER min\Integer max\Integer Equal\Integer MINUS\Integer\Interface DIV\Integer\Interface
INVERSE\Integer\Interface MOD\Integer\Interface EXPT\Integer\Interface QUOTIENT\Integer\Interface
min\Integer\Interface max\Integer\Interface GE\Integer\Interface LE\Integer\Interface LT\Integer\Interface
GT\Integer\Interface TIMES\Integer\Interface DIFFERENCE\Integer\Interface PLUS\Integer\Interface
Induction\Integer Induction\Integer\Interface)


(PRETTYCOMPRINT INTEGERCOMS)

(RPAQQ INTEGERCOMS ((P (CheckLoad (QUOTE TYPE)
                                  (QUOTE (110 . <AFFIRM>BASE-AFFIRM.EXE.54))
                                  (QUOTE Integer)))
                    (FNS * IntegerFNS)
                    (FNS * Integer\InterfaceFNS)
                    (VARS * IntegerConstants)
                    (VARS * Integer\InterfaceConstants)
                    (IFPROP ALL * IntegerConstants)
                    (IFPROP (PrimaryLHSides EqualOp EQOP)
                            * IntegerFNS)
                    (IFPROP (PrimaryLHSides EqualOp EQOP)
                            * Integer\InterfaceFNS)
                    (P (InitializeLoad TYPE Integer 110 ((NoteInterfaces Integer\InterfaceFNS)
                                                         (initInfix (QUOTE Integer))
                                                         (initNeeds (QUOTE Integer))
                                                         (NoteDeclarations (QUOTE Integer))
                                                         (NoteLeftHandSides IntegerFNS])
(CheckLoad (QUOTE TYPE)
           (QUOTE (110 . <AFFIRM>BASE-AFFIRM.EXE.54))
           (QUOTE Integer))

(RPAQQ IntegerFNS (Induction\Integer MINUS\Integer DIV\Integer INVERSE\Integer MOD\Integer EXPT\Integer
                                     QUOTIENT\Integer min\Integer max\Integer GE\Integer LE\Integer
                                     LT\Integer GT\Integer TIMES\Integer DIFFERENCE\Integer PLUS\Integer
                                     Equal\Integer))
(DEFINEQ

(Induction\Integer
  [LAMBDA (i1)
    (if (Report Induction\Integer 1 schema)
        then [cases\Schema (Prop\Induction 0)
                           [ALL\Boolean i1\Integer (IMP\Boolean (AND\Boolean (LE\Integer i1\Integer 0)
                                                                             (IH\Induction i1\Integer))
                                                                (Prop\Induction (DIFFERENCE\Integer
                                                                                   i1\Integer 1]
                           (ALL\Boolean i1\Integer (IMP\Boolean (AND\Boolean (GE\Integer i1\Integer 0)
                                                                             (IH\Induction i1\Integer))
                                                                (Prop\Induction (PLUS\Integer i1\Integer 1]
     elseif <'Induction\Integer i1>])

(MINUS\Integer
  [LAMBDA (i1)
    (BINXEVAL (if <'MINUS\Integer i1>])

(DIV\Integer
  [LAMBDA (i1 i2)
    (BINXEVAL (if <'DIV\Integer i1 i2>])

(INVERSE\Integer
  [LAMBDA (i1)
    (BINXEVAL (if <'INVERSE\Integer i1>])

(MOD\Integer
  [LAMBDA (i1 i2)
    (BINXEVAL (if <'MOD\Integer i1 i2>])

(EXPT\Integer
  [LAMBDA (i1 i2)
    (BINXEVAL (if <'EXPT\Integer i1 i2>])

(QUOTIENT\Integer
  [LAMBDA (i1 i2)
    (BINXEVAL (if <'QUOTIENT\Integer i1 i2>])
```

```
(min\Integer
  (LAMBDA (I1 I2)
    (if (Report min\Integer 1 axiom)
        then (IfThenElse (LE\Integer I1 I2)
                         I1 I2)
      elseif <'min\Integer I1 I2>))

(max\Integer
  (LAMBDA (I1 I2)
    (if (Report max\Integer 1 axiom)
        then (IfThenElse (LE\Integer I1 I2)
                         I2 I1)
      elseif <'max\Integer I1 I2>))

(GE\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'GE\Integer I1 I2>))

(LE\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'LE\Integer I1 I2>))

(LT\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'LT\Integer I1 I2>))

(GT\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'GT\Integer I1 I2>))

(TIMES\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'TIMES\Integer I1 I2>))

(DIFFERENCE\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'DIFFERENCE\Integer I1 I2>))

(PLUS\Integer
  (LAMBDA (I1 I2)
    (BINXEVAL (if <'PLUS\Integer I1 I2>))

(Equal\Integer
  (LAMBDA (I J)                                    (* D.Musser "30-Aug-79 14:37")
    (if (EQUAL I J) and (Report Equal\Integer 1 axiom)
        then TRUE
      elseif (FIXP I) and (FIXP J)
        then FALSE
      elseif <'Equal\Integer I J>))
)

(RPAQQ Integer\InterfaceFNS (Induction\Integer\Interface MINUS\Integer\Interface DIV\Integer\Interface
                                                         INVERSE\Integer\Interface MOD\Integer\Interface
                                                         EXPT\Integer\Interface QUOTIENT\Integer\Interface
                                                         min\Integer\Interface max\Integer\Interface
                                                         GE\Integer\Interface LE\Integer\Interface
                                                         LT\Integer\Interface GT\Integer\Interface
                                                         TIMES\Integer\Interface DIFFERENCE\Integer\Interface
                                                         PLUS\Integer\Interface))

(DEFINEQ

(Induction\Integer\Interface
  (LAMBDA (I1 TooManyArguments)
    (if I1:1='ExpressionWithType and I1:3=Integer and TooManyArguments=NIL
          and (Report Induction\Integer\Interface 1 interface)
        then (ExpressionWithType <'Induction\Integer I1:2> Boolean)
      elseif NIL))

(MINUS\Integer\Interface
  (LAMBDA (I1 TooManyArguments)
    (if I1:1='ExpressionWithType and I1:3=Integer and TooManyArguments=NIL
          and (Report MINUS\Integer\Interface 1 interface)
```

```
      then (ExpressionWithType <'MINUS\Integer I1:2> I1:3)
    elseif NIL))

(DIV\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report DIV\Integer\Interface 1 interface)
      then (ExpressionWithType <'DIV\Integer I1:2 I2:2> I2:3)
    elseif NIL))

(INVERSE\Integer\Interface
  (LAMBDA (I1 TooManyArguments)
    (if I1:1='ExpressionWithType and I1:3=Integer and TooManyArguments=NIL
        and (Report INVERSE\Integer\Interface 1 interface)
      then (ExpressionWithType <'INVERSE\Integer I1:2> I1:3)
    elseif NIL))

(MOD\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report MOD\Integer\Interface 1 interface)
      then (ExpressionWithType <'MOD\Integer I1:2 I2:2> I2:3)
    elseif NIL))

(EXPT\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report EXPT\Integer\Interface 1 interface)
      then (ExpressionWithType <'EXPT\Integer I1:2 I2:2> I2:3)
    elseif NIL))

(QUOTIENT\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report QUOTIENT\Integer\Interface 1 interface)
      then (ExpressionWithType <'QUOTIENT\Integer I1:2 I2:2> I2:3)
    elseif NIL))

(min\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report min\Integer\Interface 1 interface)
      then (ExpressionWithType <'min\Integer I1:2 I2:2> I2:3)
    elseif NIL))

(max\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report max\Integer\Interface 1 interface)
      then (ExpressionWithType <'max\Integer I1:2 I2:2> I2:3)
    elseif NIL))

(GE\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report GE\Integer\Interface 1 interface)
      then (ExpressionWithType <'GE\Integer I1:2 I2:2> Boolean)
    elseif NIL))

(LE\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report LE\Integer\Interface 1 interface)
      then (ExpressionWithType <'LE\Integer I1:2 I2:2> Boolean)
    elseif NIL))

(LT\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
        and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report LT\Integer\Interface 1 interface)
      then (ExpressionWithType <'LT\Integer I1:2 I2:2> Boolean)
    elseif NIL))
```

```
(GT\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
          and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report GT\Integer\Interface 1 interface)
      then (ExpressionWithType <'GT\Integer I1:2 I2:2> Boolean)
     elseif NIL))

(TIMES\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
          and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report TIMES\Integer\Interface 1 interface)
      then (ExpressionWithType <'TIMES\Integer I1:2 I2:2> I2:3)
     elseif NIL))

(DIFFERENCE\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
          and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report DIFFERENCE\Integer\Interface 1 interface)
      then (ExpressionWithType <'DIFFERENCE\Integer I1:2 I2:2> I2:3)
     elseif NIL))

(PLUS\Integer\Interface
  (LAMBDA (I1 I2 TooManyArguments)
    (if I1:1='ExpressionWithType and I2:3=Integer and I2:1='ExpressionWithType and I2:3=Integer
          and TooManyArguments=NIL and (EQUAL I1:3 I2:3) and (Report PLUS\Integer\Interface 1 interface)
      then (ExpressionWithType <'PLUS\Integer I1:2 I2:2> I2:3)
     elseif NIL))
)

(RPAQQ IntegerConstants (Integer))

(RPAQQ Integer Integer)

(RPAQQ Integer\InterfaceConstants NIL)
  (PUTPROPS Integer IsConstant T
                    DeclaredType Integer
                    LocalDeclarations ((I1\Interface ExpressionWithType I1\Integer Integer)
                                       (I2\Interface ExpressionWithType I2\Integer Integer)
                                       (I3\Interface ExpressionWithType I3\Integer Integer)
                                       (I1\Interface ExpressionWithType I1\Integer Integer))
                    Infix NIL
                    Needs NIL
                    EqualOp Equal\Integer)

(RPAQQ IntegerFNS (Induction\Integer MINUS\Integer DIV\Integer INVERSE\Integer MOD\Integer EXPT\Integer
                                    QUOTIENT\Integer min\Integer max\Integer GE\Integer LE\Integer
                                    LT\Integer GT\Integer TIMES\Integer DIFFERENCE\Integer PLUS\Integer
                                    Equal\Integer))

(PUTPROPS Induction\Integer PrimaryLHSides (1 (1 Induction\Integer I1\Integer)))

(PUTPROPS min\Integer PrimaryLHSides (1 (1 min\Integer I1\Integer I2\Integer)))

(PUTPROPS max\Integer PrimaryLHSides (1 (1 max\Integer I1\Integer I2\Integer)))

(PUTPROPS Equal\Integer PrimaryLHSides (1 (1 Equal\Integer I1\Integer I1\Integer)))

(PUTPROPS Induction\Integer EqualOp EQV\Boolean)

(PUTPROPS MINUS\Integer EqualOp Equal\Integer)

(PUTPROPS DIV\Integer EqualOp Equal\Integer)

(PUTPROPS INVERSE\Integer EqualOp Equal\Integer)

(PUTPROPS MOD\Integer EqualOp Equal\Integer)

(PUTPROPS EXPT\Integer EqualOp Equal\Integer)

(PUTPROPS QUOTIENT\Integer EqualOp Equal\Integer)

(PUTPROPS min\Integer EqualOp Equal\Integer)
```

```
(PUTPROPS max\Integer EqualOp Equal\Integer)

(PUTPROPS GE\Integer EqualOp EQV\Boolean)

(PUTPROPS LE\Integer EqualOp EQV\Boolean)

(PUTPROPS LT\Integer EqualOp EQV\Boolean)

(PUTPROPS GT\Integer EqualOp EQV\Boolean)

(PUTPROPS TIMES\Integer EqualOp Equal\Integer)

(PUTPROPS DIFFERENCE\Integer EqualOp Equal\Integer)

(PUTPROPS PLUS\Integer EqualOp Equal\Integer)

(PUTPROPS Equal\Integer EqualOp EQV\Boolean)

(PUTPROPS Equal\Integer EQOP T)

(RPAQQ Integer\InterfaceFNS (Induction\Integer\Interface MINUS\Integer\Interface DIV\Integer\Interface
                                INVERSE\Integer\Interface MOD\Integer\Interface
                                EXPT\Integer\Interface QUOTIENT\Integer\Interface
                                min\Integer\Interface max\Integer\Interface
                                GE\Integer\Interface LE\Integer\Interface
                                LT\Integer\Interface GT\Integer\Interface
                                TIMES\Integer\Interface DIFFERENCE\Integer\Interface
                                PLUS\Integer\Interface))

(PUTPROPS Induction\Integer\Interface PrimaryLHSides (1 (1 Induction\Integer\Interface
                                (ExpressionWithType I1\Integer Integer)
                                NIL)))

(PUTPROPS MINUS\Integer\Interface PrimaryLHSides (1 (1 MINUS\Integer\Interface (ExpressionWithType I1\Integer
                                                                                Integer)
                                NIL)))

(PUTPROPS DIV\Integer\Interface PrimaryLHSides (1 (1 DIV\Integer\Interface (ExpressionWithType I1\Integer
                                                                            Integer)
                                (ExpressionWithType I2\Integer Integer)
                                NIL)))

(PUTPROPS INVERSE\Integer\Interface PrimaryLHSides (1 (1 INVERSE\Integer\Interface (ExpressionWithType
                                                                                I1\Integer
                                                                                Integer)
                                NIL)))

(PUTPROPS MOD\Integer\Interface PrimaryLHSides (1 (1 MOD\Integer\Interface (ExpressionWithType I1\Integer
                                                                            Integer)
                                (ExpressionWithType I2\Integer Integer)
                                NIL)))

(PUTPROPS EXPT\Integer\Interface PrimaryLHSides (1 (1 EXPT\Integer\Interface (ExpressionWithType I1\Integer
                                                                                Integer)
                                (ExpressionWithType I2\Integer Integer)
                                NIL)))

(PUTPROPS QUOTIENT\Integer\Interface PrimaryLHSides (1 (1 QUOTIENT\Integer\Interface
                                (ExpressionWithType I1\Integer Integer)
                                (ExpressionWithType I2\Integer Integer)
                                NIL)))

(PUTPROPS min\Integer\Interface PrimaryLHSides (1 (1 min\Integer\Interface (ExpressionWithType I1\Integer
                                                                            Integer)
                                (ExpressionWithType I2\Integer Integer)
                                NIL)))

(PUTPROPS max\Integer\Interface PrimaryLHSides (1 (1 max\Integer\Interface (ExpressionWithType I1\Integer
                                                                            Integer)
                                (ExpressionWithType I2\Integer Integer)
                                NIL)))
```

```
(PUTPROPS GE\Integer\Interface PrimaryLHSides (1 (1 GE\Integer\Interface (ExpressionWithType I1\Integer
                                                                          Integer)
                                                 (ExpressionWithType I2\Integer Integer)
                                                 NIL)))

(PUTPROPS LE\Integer\Interface PrimaryLHSides (1 (1 LE\Integer\Interface (ExpressionWithType I1\Integer
                                                                          Integer)
                                                 (ExpressionWithType I2\Integer Integer)
                                                 NIL)))

(PUTPROPS LT\Integer\Interface PrimaryLHSides (1 (1 LT\Integer\Interface (ExpressionWithType I1\Integer
                                                                          Integer)
                                                 (ExpressionWithType I2\Integer Integer)
                                                 NIL)))

(PUTPROPS GT\Integer\Interface PrimaryLHSides (1 (1 GT\Integer\Interface (ExpressionWithType I1\Integer
                                                                          Integer)
                                                 (ExpressionWithType I2\Integer Integer)
                                                 NIL)))

(PUTPROPS TIMES\Integer\Interface PrimaryLHSides (1 (1 TIMES\Integer\Interface (ExpressionWithType I1\Integer
                                                                                Integer)
                                                    (ExpressionWithType I2\Integer Integer)
                                                    NIL)))

(PUTPROPS DIFFERENCE\Integer\Interface PrimaryLHSides (1 (1 DIFFERENCE\Integer\Interface
                                                           (ExpressionWithType I1\Integer Integer)
                                                           (ExpressionWithType I2\Integer Integer)
                                                           NIL)))

(PUTPROPS PLUS\Integer\Interface PrimaryLHSides (1 (1 PLUS\Integer\Interface (ExpressionWithType I1\Integer
                                                                              Integer)
                                                    (ExpressionWithType I2\Integer Integer)
                                                    NIL)))
(InitializeLoad TYPE Integer 110 ((NoteInterfaces Integer\InterfaceFNS)
                 (InitInfix (QUOTE Integer))
                 (InitNeeds (QUOTE Integer))
                 (NoteDeclarations (QUOTE Integer))
                 (NoteLeftHandSides IntegerFNS)))
(DECLARE: DONTCOPY
  (FILEMAP (NIL (1642 4339 (Induction\Integer 1654 . 2321) (MINUS\Integer 2325 . 2414) (DIV\Integer 2418 . 2589)
 (INVERSE\Integer 2513 . 2686) (MOD\Integer 2610 . 2701) (EXPT\Integer 2705 . 2798) (QUOTIENT\Integer 2802 .
2903) (min\Integer 2907 . 3105) (max\Integer 3109 . 3307) (GE\Integer 3311 . 3408) (LE\Integer 3404 . 3493) (
LT\Integer 3497 . 3586) (GT\Integer 3590 . 3679) (TIMES\Integer 3683 . 3778) (DIFFERENCE\Integer 3782 . 3887)
(PLUS\Integer 3891 . 3984) (Equal\Integer 3988 . 4336)) (4827 11233 (Induction\Integer\Interface 4839 . 5169)
(MINUS\Integer\Interface 5173 . 5488) (DIV\Integer\Interface 5492 . 5981) (INVERSE\Integer\Interface 5985 .
6226) (MOD\Integer\Interface 6230 . 6639) (EXPT\Integer\Interface 6643 . 7055) (QUOTIENT\Integer\Interface
7059 . 7483) (min\Integer\Interface 7487 . 7898) (max\Integer\Interface 7902 . 8308) (GE\Integer\Interface
8313 . 8722) (LE\Integer\Interface 8726 . 9135) (LT\Integer\Interface 9139 . 9548) (GT\Integer\Interface 9552
. 9961) (TIMES\Integer\Interface 9965 . 10380) (DIFFERENCE\Integer\Interface 10384 . 10814) (
PLUS\Integer\Interface 10818 . 11230)))))
STOP
```

```
(FILECREATED "12-Oct-79 10:38:24" <AFFIRM>INIT.LISP;6 1885

     changes to:  INITCOMS

     previous date: "18-Sep-79 21:55:52" <AFFIRM>INIT.LISP;5)


(PRETTYCOMPRINT INITCOMS)

(RPAQQ INITCOMS ((VARS (CLEANUPOPTIONS (QUOTE (RC F)))
                       (#CAREFULCOLUMNS 25)
                       (CHANGESARRAY NIL)
                       (CL:FLG (QUOTE ALL))
                       (CLISPIFYPRETTYFLG (QUOTE ALL))
                       (DWIMIFYCOMPFLG T)
                       (DWIMWAIT 200)
                       (FASTTYPEFLG T)
                       (MKSWAPSIZE 0)
                       (PROMPT#FLG T)
                       (SYSOUTGAG T)
                       (TREATASCLISPFLG T)
                       (ARCHIVEFLG NIL))
                 (ADDVARS (LISPXCOMS QUIT DA QU UNTRACE XLP LP)
                          (LISPXMACROS (QUIT (LOGOUT))
                                       (DA (DATE 29813374976))
                                       (QU (LOGOUT))
                                       [UNTRACE (COND ((OR (NULL LISPXLINE)
                                                           (NULL (CAR LISPXLINE)))
                                                       (UNBREAK))
                                                      (T (APPLY (QUOTE UNBREAK)
                                                                LISPXLINE]
                                       (XLP (TENEX "XLP
"))
                                       (LP (TENEX "LP
"]))

(RPAQQ CLEANUPOPTIONS (RC F))

(RPAQ #CAREFULCOLUMNS 25)

(RPAQ CHANGESARRAY NIL)

(RPAQQ CL:FLG ALL)

(RPAQQ CLISPIFYPRETTYFLG ALL)

(RPAQ DWIMIFYCOMPFLG T)

(RPAQ DWIMWAIT 200)

(RPAQ FASTTYPEFLG T)

(RPAQ MKSWAPSIZE 0)

(RPAQ PROMPT#FLG T)

(RPAQ SYSOUTGAG T)

(RPAQ TREATASCLISPFLG T)

(RPAQ ARCHIVEFLG NIL)

(ADDTOVAR LISPXCOMS QUIT DA QU UNTRACE XLP LP)

(ADDTOVAR LISPXMACROS (QUIT (LOGOUT))
                      (DA (DATE 29813374976))
                      (QU (LOGOUT))
                      [UNTRACE (COND ((OR (NULL LISPXLINE)
                                          (NULL (CAR LISPXLINE)))
                                      (UNBREAK))
                                     (T (APPLY (QUOTE UNBREAK)
                                               LISPXLINE]
                      (XLP (TENEX "XLP
"))
```

```
                        (LP (TENEX "LP
"))))
(DECLARE: DONTCOPY
  (FILEMAP (NIL)))
STOP
```

(FILECREATED "17-Jan-80 17:19:18" <AFFIRM>INTEGER.;6 16363

changes to: INTEGER MINUS\Integer DIV\Integer INVERSE\Integer MOD\Integer EXPT\Integer QUOTIENT\Integer min\Integer max\Integer GE\Integer LE\Integer LT\Integer GT\Integer TIMES\Integer DIFFERENCE\Integer PLUS\Integer Equal\Integer MINUS\Integer\Interface DIV\Integer\Interface INVERSE\Integer\Interface MOD\Integer\Interface EXPT\Integer\Interface QUOTIENT\Integer\Interface min\Integer\Interface max\Integer\Interface GE\Integer\Interface LE\Integer\Interface LT\Integer\Interface GT\Integer\Interface TIMES\Integer\Interface DIFFERENCE\Integer\Interface PLUS\Integer\Interface)

(PRETTYCOMPRINT INTEGERCOMS)

(RPAQQ INTEGERCOMS ((P (CheckLoad (QUOTE TYPE)
(QUOTE (35 . <AFFIRM>BASE-AFFIRM.SAV;30))
(QUOTE Integer)))
(FNS * IntegerFNS)
(FNS * Integer\InterfaceFNS)
(VARS * IntegerConstants)
(VARS * Integer\InterfaceConstants)
(IFPROP ALL * IntegerConstants)
(IFPROP (PrimaryLHSides EqualOp EQOP)
* IntegerFNS)
(IFPROP (PrimaryLHSides EqualOp EQOP)
* Integer\InterfaceFNS)
(P (InitializeLoad TYPE Integer 35 ((NoteInterfaces Integer\InterfaceFNS)
(initInfix (QUOTE Integer))
(initNeeds (QUOTE Integer))
(NoteDeclarations (QUOTE Integer))
(NoteLeftHandSides IntegerFNS))
(CheckLoad (QUOTE TYPE)
(QUOTE (35 . <AFFIRM>BASE-AFFIRM.SAV;30))
(QUOTE Integer))

(RPAQQ IntegerFNS (MINUS\Integer DIV\Integer INVERSE\Integer MOD\Integer EXPT\Integer QUOTIENT\Integer min\Integer max\Integer GE\Integer LE\Integer LT\Integer GT\Integer TIMES\Integer DIFFERENCE\Integer PLUS\Integer Equal\Integer))

(DEFINEQ

1

(MINUS\Integer
(LAMBDA (i1)
(BINXEVAL (BINXEVAL (if <'MINUS\Integer i1>))

2

(DIV\Integer
(LAMBDA (i1 i2)
(BINXEVAL (BINXEVAL (if <'DIV\Integer i1 i2>))

3

(INVERSE\Integer
(LAMBDA (i1)
(BINXEVAL (BINXEVAL (if <'INVERSE\Integer i1>))

4

(MOD\Integer
(LAMBDA (i1 i2)
(BINXEVAL (BINXEVAL (if <'MOD\Integer i1 i2>))

5

(EXPT\Integer
(LAMBDA (i1 i2)
(BINXEVAL (BINXEVAL (if <'EXPT\Integer i1 i2>))

6

```
(QUOTIENT\Integer
  (LAMBDA (i1 i2)
    (BINXEVAL (BINXEVAL (if <'QUOTIENT\Integer i1 i2>))
```

7

```
(min\Integer
  (LAMBDA (i1 i2)
    (if (Report min\Integer 1 axiom)
        then (IfThenElse (LE\Integer i1 i2)
                         i1 i2)
      elseif <'min\Integer i1 i2>))
```

8

```
(max\Integer
  (LAMBDA (i1 i2)
    (if (Report max\Integer 1 axiom)
        then (IfThenElse (LE\Integer i1 i2)
                         i2 i1)
      elseif <'max\Integer i1 i2>))
```

9

```
(GE\Integer
  (LAMBDA (i1 i2)
    (if (Report GE\Integer 1 axiom)
        then (IfThenElse (LE\Integer i2 i1)
                         TRUE FALSE)
      elseif <'GE\Integer i1 i2>))
```

10

```
(LE\Integer
  (LAMBDA (i1 i2)
    (BINXEVAL (BINXEVAL (if <'LE\Integer i1 i2>))
```

11

```
(LT\Integer
  (LAMBDA (i1 i2)
    (if (Report LT\Integer 1 axiom)
        then (IfThenElse (LE\Integer i1 (DIFFERENCE\Integer i2 1))
                         TRUE FALSE)
      elseif <'LT\Integer i1 i2>))
```

12

```
(GT\Integer
  (LAMBDA (i1 i2)
    (if (Report GT\Integer 1 axiom)
        then (IfThenElse (LE\Integer i2 (DIFFERENCE\Integer i1 1))
                         TRUE FALSE)
      elseif <'GT\Integer i1 i2>))
```

13

```
(TIMES\Integer
  (LAMBDA (i1 i2)
    (BINXEVAL (BINXEVAL (if <'TIMES\Integer i1 i2>))
```

14

```
(DIFFERENCE\Integer
  (LAMBDA (i1 i2)
    (BINXEVAL (BINXEVAL (if <'DIFFERENCE\Integer i1 i2>))
```

15

```
(PLUS\Integer
  (LAMBDA (i1 i2)
    (BINXEVAL (BINXEVAL (if <'PLUS\Integer i1 i2>))
```

16

```
(Equal\Integer
  (LAMBDA (i j)                                    (* D.Musser "30-Aug-79 14:37")
    (if (EQUAL i j) and (Report Equal\Integer 1 axiom)
        then TRUE
      elseif (FIXP i) and (FIXP j)
        then FALSE
      elseif <'Equal\Integer i j>))
)

(RPAQQ Integer\InterfaceFNS (MINUS\Integer\Interface DIV\Integer\Interface INVERSE\Integer\Interface
                                                    MOD\Integer\Interface EXPT\Integer\Interface
                                                    QUOTIENT\Integer\Interface min\Integer\Interface
                                                    max\Integer\Interface GE\Integer\Interface
                                                    LE\Integer\Interface LT\Integer\Interface
                                                    GT\Integer\Interface TIMES\Integer\Interface
                                                    DIFFERENCE\Integer\Interface PLUS\Integer\Interface))
(DEFINEQ
```

17

```
(MINUS\Integer\Interface
  (LAMBDA (i1 TooManyArguments)
    (if i1:1='ExpressionWithType and i1:3=Integer and TooManyArguments=NIL
          and (Report MINUS\Integer\Interface 1 interface)
        then (ExpressionWithType <'MINUS\Integer i1:2> i1:3)
      elseif NIL))
```

18

```
(DIV\Integer\Interface
  (LAMBDA (i1 i2 TooManyArguments)
    (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
          and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report DIV\Integer\Interface 1 interface)
        then (ExpressionWithType <'DIV\Integer i1:2 i2:2> i2:3)
      elseif NIL))
```

19

```
(INVERSE\Integer\Interface
  (LAMBDA (i1 TooManyArguments)
    (if i1:1='ExpressionWithType and i1:3=Integer and TooManyArguments=NIL
          and (Report INVERSE\Integer\Interface 1 interface)
        then (ExpressionWithType <'INVERSE\Integer i1:2> i1:3)
      elseif NIL))
```

20

```
(MOD\Integer\Interface
  (LAMBDA (i1 i2 TooManyArguments)
    (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
          and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report MOD\Integer\Interface 1 interface)
        then (ExpressionWithType <'MOD\Integer i1:2 i2:2> i2:3)
      elseif NIL))
```

21

'EXPT\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report EXPT\Integer\Interface 1 interface)
    then (ExpressionWithType <'EXPT\Integer i1:2 i2:2> i2:3)
  elseif NIL))
```

22

(QUOTIENT\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report QUOTIENT\Integer\Interface 1 interface)
    then (ExpressionWithType <'QUOTIENT\Integer i1:2 i2:2> i2:3)
  elseif NIL))
```

23

(min\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report min\Integer\Interface 1 interface)
    then (ExpressionWithType <'min\Integer i1:2 i2:2> i2:3)
  elseif NIL))
```

24

(max\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report max\Integer\Interface 1 interface)
    then (ExpressionWithType <'max\Integer i1:2 i2:2> i2:3)
  elseif NIL))
```

25

(GE\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report GE\Integer\Interface 1 interface)
    then (ExpressionWithType <'GE\Integer i1:2 i2:2> Boolean)
  elseif NIL))
```

26

(LE\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report LE\Integer\Interface 1 interface)
    then (ExpressionWithType <'LE\Integer i1:2 i2:2> Boolean)
  elseif NIL))
```

27

(LT\Integer\Interface

```
(LAMBDA (i1 i2 TooManyArguments)
  (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
      and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report LT\Integer\Interface 1 interface)
    then (ExpressionWithType <'LT\Integer i1:2 i2:2> Boolean)
  elseif NIL))
```

28

```
(GT\Integer\Interface
  (LAMBDA (i1 i2 TooManyArguments)
    (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
        and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report GT\Integer\Interface 1 interface)
      then (ExpressionWithType <'GT\Integer i1:2 i2:2> Boolean)
     elseif NIL))
```

29

```
(TIMES\Integer\Interface
  (LAMBDA (i1 i2 TooManyArguments)
    (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
        and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report TIMES\Integer\Interface 1 interface)
      then (ExpressionWithType <'TIMES\Integer i1:2 i2:2> i2:3)
     elseif NIL))
```

30

```
(DIFFERENCE\Integer\Interface
  (LAMBDA (i1 i2 TooManyArguments)
    (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
        and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report DIFFERENCE\Integer\Interface 1 interface)
      then (ExpressionWithType <'DIFFERENCE\Integer i1:2 i2:2> i2:3)
     elseif NIL))
```

31

```
(PLUS\Integer\Interface
  (LAMBDA (i1 i2 TooManyArguments)
    (if i1:1='ExpressionWithType and i2:3=Integer and i2:1='ExpressionWithType and i2:3=Integer
        and TooManyArguments=NIL and (EQUAL i1:3 i2:3) and (Report PLUS\Integer\Interface 1 interface)
      then (ExpressionWithType <'PLUS\Integer i1:2 i2:2> i2:3)
     elseif NIL))
)

(RPAQQ IntegerConstants (Integer))

(RPAQQ Integer Integer)

(RPAQQ Integer\InterfaceConstants NIL)
  (PUTPROPS Integer IsConstant T
                    DeclaredType Integer
                    LocalDeclarations ((i1\Interface ExpressionWithType i1\Integer Integer)
                                       (i2\Interface ExpressionWithType i2\Integer Integer)
                                       (i3\Interface ExpressionWithType i3\Integer Integer))
                    Infix NIL
                    Needs ((Types Boolean))
                    EqualOp Equal\Integer)

(RPAQQ IntegerFNS (MINUS\Integer DIV\Integer INVERSE\Integer MOD\Integer EXPT\Integer QUOTIENT\Integer
                   min\Integer max\Integer GE\Integer LE\Integer LT\Integer GT\Integer
                   TIMES\Integer DIFFERENCE\Integer PLUS\Integer Equal\Integer))

(PUTPROPS min\Integer PrimaryLHSides (1 (1 min\Integer i1\Integer i2\Integer)))

(PUTPROPS max\Integer PrimaryLHSides (1 (1 max\Integer i1\Integer i2\Integer)))

(PUTPROPS GE\Integer PrimaryLHSides (1 (1 GE\Integer i1\Integer i2\Integer)))

(PUTPROPS LT\Integer PrimaryLHSides (1 (1 LT\Integer i1\Integer i2\Integer)))

(PUTPROPS GT\Integer PrimaryLHSides (1 (1 GT\Integer i1\Integer i2\Integer)))

(PUTPROPS Equal\Integer PrimaryLHSides (1 (1 Equal\Integer i1\Integer i1\Integer)))

(PUTPROPS min\Integer EqualOp Equal\Integer)

(PUTPROPS max\Integer EqualOp Equal\Integer)
```

```
(PUTPROPS GE\Integer EqualOp EQV\Boolean)

(PUTPROPS LT\Integer EqualOp EQV\Boolean)

(PUTPROPS GT\Integer EqualOp EQV\Boolean)

(PUTPROPS Equal\Integer EqualOp EQV\Boolean)

(PUTPROPS Equal\Integer EQOP T)

(RPAQQ Integer\InterfaceFNS (MINUS\Integer\Interface DIV\Integer\Interface INVERSE\Integer\Interface
                                MOD\Integer\Interface EXPT\Integer\Interface
                                QUOTIENT\Integer\Interface min\Integer\Interface
                                max\Integer\Interface GE\Integer\Interface
                                LE\Integer\Interface LT\Integer\Interface
                                GT\Integer\Interface TIMES\Integer\Interface
                                DIFFERENCE\Integer\Interface PLUS\Integer\Interface))

(PUTPROPS MINUS\Integer\Interface PrimaryLHSides (1 (1 MINUS\Integer\Interface (ExpressionWithType i1\Integer
                                                                                Integer)
                                                     NIL)))

(PUTPROPS DIV\Integer\Interface PrimaryLHSides (1 (1 DIV\Integer\Interface (ExpressionWithType i1\Integer
                                                                           Integer)
                                                   (ExpressionWithType i2\Integer Integer)
                                                   NIL)))

(PUTPROPS INVERSE\Integer\Interface PrimaryLHSides (1 (1 INVERSE\Integer\Interface (ExpressionWithType
                                                                                   i1\Integer
                                                                                   Integer)
                                                       NIL)))

(PUTPROPS MOD\Integer\Interface PrimaryLHSides (1 (1 MOD\Integer\Interface (ExpressionWithType i1\Integer
                                                                           Integer)
                                                   (ExpressionWithType i2\Integer Integer)
                                                   NIL)))

(PUTPROPS EXPT\Integer\Interface PrimaryLHSides (1 (1 EXPT\Integer\Interface (ExpressionWithType i1\Integer
                                                                             Integer)
                                                    (ExpressionWithType i2\Integer Integer)
                                                    NIL)))

(PUTPROPS QUOTIENT\Integer\Interface PrimaryLHSides (1 (1 QUOTIENT\Integer\Interface
                                                           (ExpressionWithType i1\Integer Integer)
                                                           (ExpressionWithType i2\Integer Integer)
                                                           NIL)))

(PUTPROPS min\Integer\Interface PrimaryLHSides (1 (1 min\Integer\Interface (ExpressionWithType i1\Integer
                                                                           Integer)
                                                   (ExpressionWithType i2\Integer Integer)
                                                   NIL)))

(PUTPROPS max\Integer\Interface PrimaryLHSides (1 (1 max\Integer\Interface (ExpressionWithType i1\Integer
                                                                           Integer)
                                                   (ExpressionWithType i2\Integer Integer)
                                                   NIL)))

(PUTPROPS GE\Integer\Interface PrimaryLHSides (1 (1 GE\Integer\Interface (ExpressionWithType i1\Integer
                                                                         Integer)
                                                  (ExpressionWithType i2\Integer Integer)
                                                  NIL)))

(PUTPROPS LE\Integer\Interface PrimaryLHSides (1 (1 LE\Integer\Interface (ExpressionWithType i1\Integer
                                                                         Integer)
                                                  (ExpressionWithType i2\Integer Integer)
                                                  NIL)))

(PUTPROPS LT\Integer\Interface PrimaryLHSides (1 (1 LT\Integer\Interface (ExpressionWithType i1\Integer
                                                                         Integer)
                                                  (ExpressionWithType i2\Integer Integer)
                                                  NIL)))
```

```
(PUTPROPS GT\Integer\Interface PrimaryLHSides (1 (1 GT\Integer\Interface (ExpressionWithType i1\Integer
                                                                          Integer)
                                                  (ExpressionWithType i2\Integer Integer)
                                                  NIL)))

(PUTPROPS TIMES\Integer\Interface PrimaryLHSides (1 (1 TIMES\Integer\Interface (ExpressionWithType i1\Integer
                                                                                Integer)
                                                       (ExpressionWithType i2\Integer Integer)
                                                       NIL)))

(PUTPROPS DIFFERENCE\Integer\Interface PrimaryLHSides (1 (1 DIFFERENCE\Integer\Interface
                                                            (ExpressionWithType i1\Integer Integer)
                                                            (ExpressionWithType i2\Integer Integer)
                                                            NIL)))

(PUTPROPS PLUS\Integer\Interface PrimaryLHSides (1 (1 PLUS\Integer\Interface (ExpressionWithType i1\Integer
                                                                             Integer)
                                                     (ExpressionWithType i2\Integer Integer)
                                                     NIL)))
(InitializeLoad TYPE Integer 35 ((NoteInterfaces Integer\InterfaceFNS)
                 (initInfix (QUOTE Integer))
                 (initNeeds (QUOTE Integer))
                 (NoteDeclarations (QUOTE Integer))
                 (NoteLeftHandSides IntegerFNS)))
(DECLARE: DONTCOPY
  (FILEMAP (NIL (1731 4308 (MINUS\Integer 1743 . 1846) (DIV\Integer 1852 . 1959) (INVERSE\Integer 1963 . 2072) (
MOD\Integer 2076 . 2183) (EXPT\Integer 2187 . 2296) (QUOTIENT\Integer 2300 . 2417) (min\Integer 2421 . 2619) (
max\Integer 2623 . 2821) (GE\Integer 2825 . 3025) (LE\Integer 3029 . 3134) (LT\Integer 3138 . 3367) (
GT\Integer 3371 . 3600) (TIMES\Integer 3604 . 3715) (DIFFERENCE\Integer 3719 . 3840) (PLUS\Integer 3844 . 3953
) (Equal\Integer 3957 . 4305)) (4776 10848 (MINUS\Integer\Interface 4788 . 5103) (DIV\Integer\Interface 5107 .
 5516) (INVERSE\Integer\Interface 5520 . 5841) (MOD\Integer\Interface 5845 . 6254) (EXPT\Integer\Interface
6258 . 6670) (QUOTIENT\Integer\Interface 6674 . 7098) (min\Integer\Interface 7102 . 7511) (
max\Integer\Interface 7515 . 7924) (GE\Integer\Interface 7928 . 8337) (LE\Integer\Interface 8341 . 8750) (
LT\Integer\Interface 8754 . 9163) (GT\Integer\Interface 9167 . 9576) (TIMES\Integer\Interface 9580 . 9995) (
DIFFERENCE\Integer\Interface 9999 . 10429) (PLUS\Integer\Interface 10433 . 10845)))))
STOP
```