11. RELATIONS

Result of all relations is Boolean.

For integer, real, character and text, the relations defined in ALGOL 60 may be used.

Comparison of ref expressions may be done using the operators == and =/=.

The above mentioned relations (except possibly for texts) are handled by in-line coding.

The operators is and in may be used to test the class membership of objects.

X is C has the value true if and only if the value X refers to an object belonging to the class C, while X in C has the value true if and only if the value of X refers to an object belonging to a class included in C. Both relations are false if X has the value none.

The is relation may be handled by in-line coding while the in relation is represented by a call on the check in (cin) subroutine.

```
Boolean procedure CIN(x,c);
   ref (object) x; ref (prototype) c;
         if x =/= none then
            begin if x.PP.plev ≥ c.plev then
                  CIN := x.PP.prefix [c.plev] == c
            end;
```

The compiler may give an errormessage if the static qualification of x and c disagree.

Comparison of two texts x and y are defined for all the six usual relational operators. The following rules are defined for the comparison:

1. Two empty texts are always equal.

2. Non-empty texts are equal if and only if they are of the same length and are instances of the same character sequence.

3. An empty text value is less than any non-empty text value.

4. If text values T and U are both non-empty then T is less than U if

   a) U is longer than T and has T as an initial subtext,

   b) the ith character of T ranks lower than the ith character of U where i ($i \geq 1$) is the lowest character position in which T differs from U.

5. The comparison is performed character by character from left to right.

6. The collating sequence is implementation defined.