**EXTEND**

**PURPOSE**

Extend a variable by another variable. The first variable will have the second variable appended onto it.

**SYNTAX**

```
EXTEND <var1> <var2>
```

where `<var1>` is the variable that will be extended;  
and `<var2>` is the variable that is added onto `<var1>`.

**EXAMPLES**

- `EXTEND Y1 Y2`  
- `EXTEND Y DEL`  
- `EXTEND X X`

**DEFAULT**

None

**SYNONYMS**

APPEND is a synonym to EXTEND, but with the arguments reversed. If you have 2 variables X1 and X2 and wish to append the contents of X2 onto the end of X1, then the following 2 commands are equivalent:

```
EXTEND X1 X2  
APPEND X2 X1
```

**RELATED COMMANDS**

- APPEND = Appends a variable to another variable.  
- DELETE = Deletes all or part of a variable.  
- LET = Creates or transforms a variable.

**APPLICATIONS**

Data transformation

**IMPLEMENTATION DATE**

Pre-1987

**PROGRAM**

```
. PURPOSE--PLOT OUT THE COMPLEX ROOTS FROM THE FAMILY OF FUNCTIONS K + 1*X + 1*X**2
. ANALYSIS TECHNIQUE--COMPLEX ROOTS + PLOT
DIMENSION 20 VARIABLES
.   STEP 1--DEFINE THE BASE POLYNOMIAL 1 + 1*X + 1*X**2. IT WILL BE UPDATED LATER
LET P = DATA 1 1 1
LET X2 = DATA -999 -999; LET Y2 = DATA -999 -999; LET D2 = DATA -999 -999
.   STEP 2--EXECUTE A LOOP. FOR EACH ITERATION, CHANGE THE BASE POLYNOMIAL TO
.                    K + 1*X + 1*X**2. COMPUTE AND STORE THE 2 COMPLEX ROOTS.
LOOP FOR K = 1 1 10
   LET P(1) = K
   LET X Y = COMPLEX ROOTS P
   LET D = K FOR I = 1 1 2
   EXTEND X2 X
   EXTEND Y2 Y
   EXTEND D2 D
END OF LOOP
.   STEP 3--PLOT THE ROOTS
CHAR 1 2 3 4 5 6 7 8 9 0; LINES BLANK ALL
TITLE K + X + X**2 (FOR K = 1 1 10); TITLE SIZE 4
X1LABEL REAL COMPONENT; Y1LABEL COMPLEX COMPONENT
PLOT Y2 X2 D2 EXCEPT D2 = -999
```

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