**SUBSTITUTE CHARACTER**

**PURPOSE**
Specify the character to use as the substitution character.

**DESCRIPTION**
The substitute character signifies that the parameter following it should be replaced with the value of that parameter.

**SYNTAX**
```
SUBSTITUTE CHARACTER <char>
```
where `<char>` is the character to use as the substitute character.

**EXAMPLES**
- SUBSTITUTE CHARACTER @
- SUBSTITUTE CHARACTER ^

**NOTE 1**
Generally, it is not necessary to change the substitute character. The one exception is if you want to define strings that contain the default substitute character.

**NOTE 2**
The substitute character can be used effectively with the LOOP command. For example, assume that variables Y1 thru YN and strings S1 and SN have been previously defined:
```
LOOP FOR K = 1 1 N
    TITLE Y^K VS X
    LEGEND 1 ^S^K
    PLOT Y^K VS X
END OF LOOP
```
Note the distinction between Y^K in the PLOT command and ^S^K in the LEGEND command. For example, when K = 1 and after the substitution, the plot command line executed is PLOT Y1 VS X where Y1 is the name of a previously created variable (that is, we are NOT substituting the value of Y1). For the LEGEND command, the command line is LEGEND 1 <text of the string in S1>. (That is, S1 is a previously created string and we are substituting its value into the command line.

**NOTE 3**
The following characters are used to determine the end of the parameter name:
- a space
- ( - a left parenthesis
- ) - a right parenthesis
- " - a quote character
- & - an ampersand character
- . - a period
- ^ - another substitute character
- , - a comma
- : - a colon
- ; - a semi-colon
- [ - a left bracket;
- ] - a right bracket
- + - a plus
- - - a minus
- * - an asterisk
- / - a forward slash

**NOTE 4**
The substitution is performed before the command is interpreted.

**NOTE 5**
If the parameter is undefined, it is replaced with a space character in the command line.
NOTE 6
The VALU() command also performs parameter substitution. However, it only works for a few commands (specifically LEGEND, TITLE, LABEL, and TEXT) while the substitute character works on any command.

DEFAULT
The default substitute character is ^ .

SYNONYMS
REPLACEMENT CHARACTER

RELATED COMMANDS
LOOP = Perform a loop.
VALU() = Perform parameter substitution within certain commands.
TERMINATOR CHARACTER = Define the character that terminates a command.
CONTINUE CHARACTER = Define the character that specifies that a command is continued onto the next line.

APPLICATIONS
Macros

IMPLEMENTATION DATE
89/6

PROGRAM
TITLE
LET THETA = SEQUENCE 0 1 380
LET X = SIN(THETA)
MULTIPLY 3 4
FEEDBACK OFF
FRAME OFF
PRE-SORT OFF
LABEL SIZE 4
LOOP FOR K = .1 .1 1.2
   LET Y = SIN(K*THETA)
   XLABEL ^K
   PLOT Y X
END OF LOOP
END OF MULTIPLY

APPLICA TIONS
Macros

IMPLEMENTATION DA T E
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PROGRAM

TITLE
LET THETA = SEQUENCE 0 1 380
LET X = SIN(THETA)
MULTIPLY 3 4
FEEDBACK OFF
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LABEL SIZE 4
LOOP FOR K = .1 .1 1.2
   LET Y = SIN(K*THETA)
   XLABEL \&K
   PLOT Y X
END OF LOOP
END OF MULTIPLY