

**SEQUENCE****PURPOSE**

Generate a sequence of values.

**DESCRIPTION**

This command is useful for generating variables that have constant increments. Increments can be either positive or negative. Increments can also be real numbers (i.e., they are not restricted to integers).

**SYNTAX 1**

LET <resp> = SEQUENCE <start> <inc> <stop>  
 where <start> is the beginning value for the sequence;  
 <inc> is the increment value of the sequence;  
 <stop> is the ending value of the sequence;  
 and <resp> is a variable where the generated sequence is saved.

This is the most common syntax for this command.

**SYNTAX 2**

LET <resp> = SEQUENCE <start> <inc> <stop> FOR I = <start2> <inc2> <stop2>  
 where <start> is the beginning value for the sequence;  
 <inc> is the increment value of the sequence;  
 <stop> is the ending value of the sequence;  
 <start2> is a number or parameter that identifies the first row of <resp> in which the sequence is saved (typically it has a value of 1);  
 <inc2> is a number or parameter that identifies the row increment of <resp> in which the sequence is saved (typically it has a value of 1);  
 <stop2> is a number or parameter that identifies the last row of <resp> in which the sequence is saved;  
 and <resp> is a variable where the generated sequence is saved.

This syntax is similar to syntax 1 except that the generated sequence is repeated until the rows of <resp> are filled as specified by the FOR clause.

**SYNTAX 3**

LET <resp> = SEQUENCE <start> <repeat> <inc> <stop>  
 where <start> is the beginning value for the sequence;  
 <inc> is the increment value of the sequence;  
 <repeat> is the number of times each value in the sequence is repeated;  
 <stop> is the ending value of the sequence;  
 and <resp> is a variable where the generated sequence is saved.

This syntax is useful for generating a sequence like 1 1 1 2 2 2 3 3 3 4 4 4.

**SYNTAX 4**

LET <resp> = SEQUENCE <start> <repeat> <inc> <stop> FOR I = <start2> <inc2> <stop2>  
 where <start> is the beginning value for the sequence;  
 <repeat> is the number of times each value in the sequence is repeated;  
 <inc> is the increment value of the sequence;  
 <stop> is the ending value of the sequence;  
 <start2> is a number or parameter that identifies the first row of <resp> in which the sequence is saved (typically it has a value of 1);  
 <inc2> is a number or parameter that identifies the row increment of <resp> in which the sequence is saved (typically it has a value of 1);  
 <stop2> is a number or parameter that identifies the last row of <resp> in which the sequence is saved;  
 and <resp> is a variable where the generated sequence is saved.

This syntax is similar to syntax 3 except that the generated sequence is repeated until the rows of <resp> are filled as specified by the FOR clause.

## EXAMPLES

```
LET X = SEQUENCE 1 1 100
LET X = SEQUENCE 1 1 10 FOR I = 1 1 100
LET X = SEQUENCE -4 9 1 4
LET X = SEQUENCE 1 50 1 2 FOR I = 1 1 100
```

## DEFAULT

None

## SYNONYMS

None

## RELATED COMMANDS

PATTERN	=	Generate numbers with a specific pattern.
DATA	=	Place numbers in a variable.
FIBONNACCI NUMBERS	=	Generate Fibonacci numbers.
LOGISTIC NUMBERS	=	Generate numbers from a logistic sequence.

## APPLICATIONS

Generating data

## IMPLEMENTATION DATE

Pre-1987

## PROGRAM

```
LET X = SEQUENCE -4 1 4 FOR I = 1 1 81
LET Y = SEQUENCE -4 9 1 4
LET Z = X**2+Y**2-X*Y
LET Z0 = SEQUENCE 5 5 40
CONTOUR PLOT Z X Y Z0
```