

Sequence applet

About the Sequence applet

The Sequence applet allows you to explore sequences functions in terms of N or of prior terms, $U(N-1)$ and $U(N-2)$.

You can define a sequence named $U1$:

- in terms of n
- in terms of $U1(n-1)$
- in terms of $U1(n-2)$
- in terms of another sequence, $U2(n)$
- in any combination of the above.

Getting started with the Sequence applet

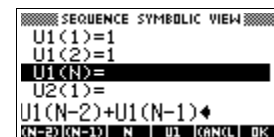
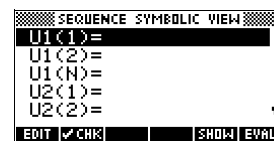
Following is an example that defines and then plots an expression in the Sequence applet.

Open the Sequence applet

1. Open the Sequence applet.

Select
Sequence
START

The Sequence applet start in the Symbolic view.



Define the expression

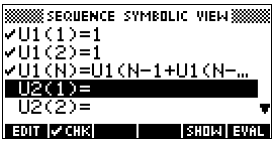
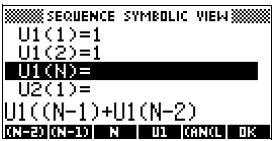
- Define the Fibonacci sequence, in which each term (after the first two) is the sum of the preceding two terms:
 $U_1 = 1$, $U_2 = 1$, and $U_n = U_{n-1} + U_{n-2}$ for $n > 3$.

In the Symbolic view of the Sequence aplet, highlight the $U1(1)$ field.

1 [ENTER] 1 [ENTER]
 $U1(N-1) + U1(N-2)$

Note: You can use the N, U1, and U2 menu keys to assist in the entry of equations.

[ENTER]



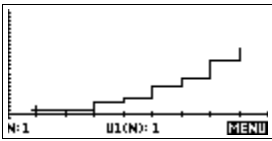
Plot the expression

- Plot the Fibonacci sequence.
 In Plot Setup, first set the SEQPLOT option to Stairstep. Reset the default plot settings by clearing the Plot Setup view.
 - A **Stairstep** graph plots n on the horizontal axis and U_n on the vertical axis.
 - A **Cobweb** graph plots U_{n-1} on the horizontal axis and U_n on the vertical axis.

[SHIFT] SETUP-PLOT
 [SHIFT] CLEAR
 [DOWN] [RIGHT] 8 [ENTER]
 [RIGHT] 8 [ENTER]

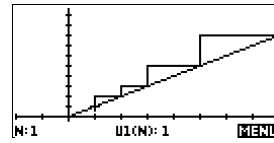


[PLOT]



- In Plot Setup, set the SEQPLOT option to Cobweb.

SETUP-PLOT
CHOOS *Select Cobweb*
OK



Display the table

5. Display the table of numeric values for this example.

N	U1		
1	1		
2	1		
3	1		
4	1		
5	1		
6	1		
7	1		
8	1		
9	1		
10	1		
11	1		
12	1		
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100	1		

