1.3 Geometric sequences and series

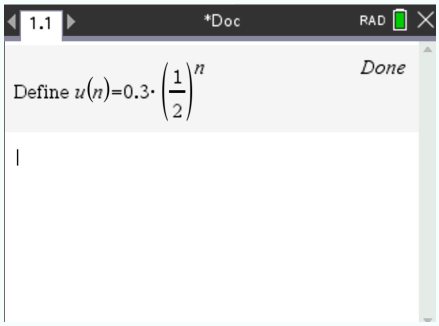
1.3.1 Enter a sequence on your calculator

Suppose you want to enter the sequence $u_n = u_1 * (\frac{1}{2})^n$ with $u_1 = 0.3$ on your calculator.

① Create a new document, press menu and select Add Calculator.

② Press menu, select Actions > Define.

③ Type '**u(n)**', then write the expression of the sequence



1.3.2 Enter a sequence on your calculator (recursive definition)

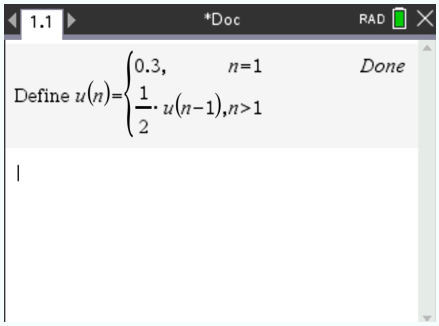
Suppose you want to enter the sequence $u_n = \frac{1}{2} * u_{n-1}$, with $u_1 = 0.3$ on your calculator.

① Create a new document, press menu and select Add Calculator.

② Press menu, select Actions > Define.

③ Type '**u(n)**', press and select

④ On the first line, write the initialization. On the second line, write the recursive expression.



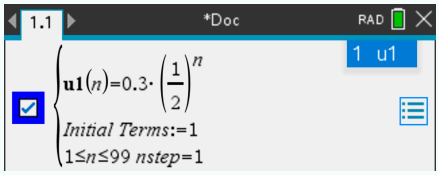
1.3.3 Graph a sequence

Suppose you want to display the graph of the sequence $u_n = u_1 * (\frac{1}{2})^n$ with $u_1 = 0.3$ on your calculator, starting at $n = 1$ and ending at $n = 20$.

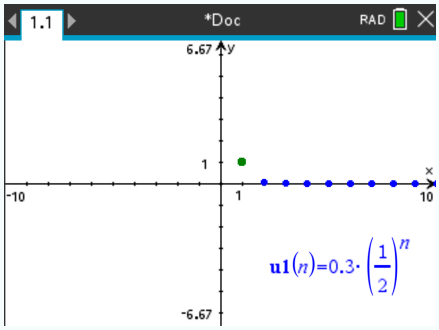
① Create a new document, press menu and select Add Graphs.

② Press menu, select Graph Entry/Edit > Sequence > Sequence

③ In the first line, write the expression of the sequence. In the second line, write the number of initial terms.



④ Press enter and the graph of the sequence is displayed.

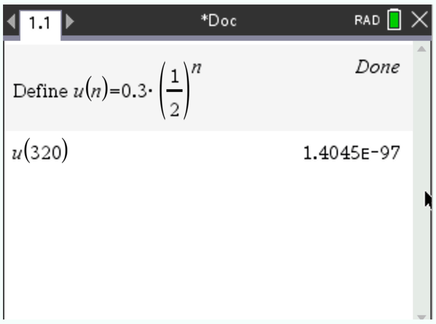


1.3.4 Compute a term of a sequence

Suppose you want to know the 320th term of the sequence $u_n = u_1 * (\frac{1}{2})^n$ with $u_1 = 0.3$.

① Enter the sequence on your calculator (see ③)

② Press enter and write '**u(320)**' in the following line.

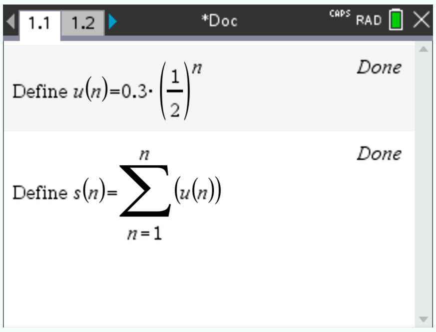


1.3.5 Graph a series

Suppose you want to graph the series of the sequence $u_n = u_1 * (\frac{1}{2})^n$ with $u_1 = 0.3$ on your calculator, starting at $n = 1$ and ending at $n = 20$.

① Enter the sequence on your calculator and press enter .

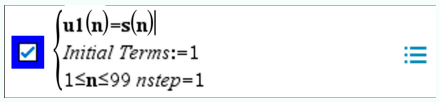
② Enter the series of the sequence in the line below. To do this, define '**s(n)=**' and press [templates key] [Σ template] .



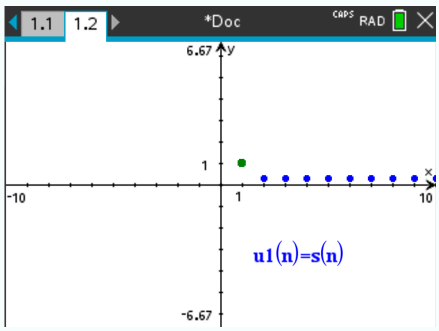
③ Create a new document, press menu and select Add Graphs.

④ Press menu , select Graph Entry/Edit > Sequence > Sequence

⑤ In the first line, write $s(n)$. In the second line, write the number of initial terms.



⑥ Press enter and the graph of the serie is displayed



1.3.6 Compute the value of a series

1. Enter the sequence on your calculator (see ③)
2. Enter the series of the sequence in the line below.
3. Type '**s(20)**' to set the ending of the serie at 20. Press enter . The result should be 0.3.