

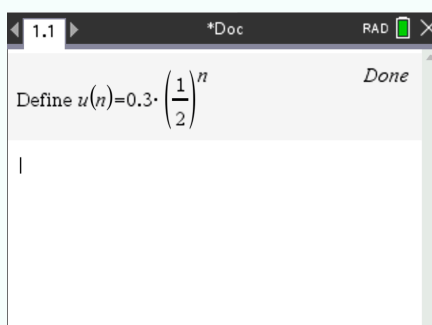


### 1.3 Geometric sequences and series

#### 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.

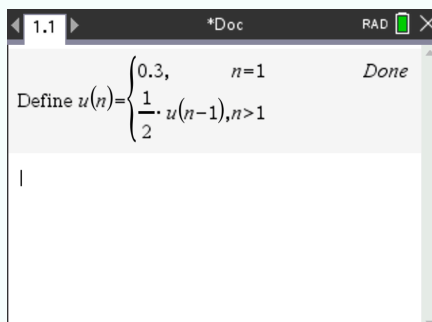
- ① Create a new document, press  and select Add Calculator.
- ② Press , select Actions > Define.
- ③ Type 'u(n)', then write the expression of the sequence



#### 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.

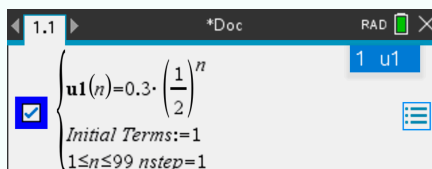
- ① Create a new document, press  and select Add Calculator.
- ② Press , select Actions > Define.
- ③ Type 'u(n)', press  and select .
- ④ On the first line, write the initialization. On the second line, write the recursive expression.




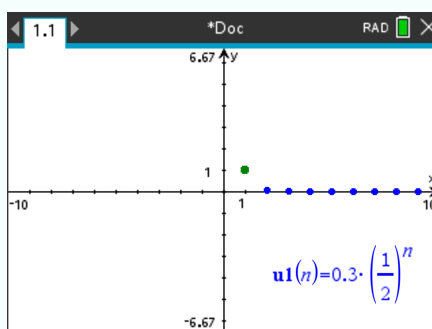
### 1.3.3 Graph a sequence

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

- ① Create a new document, press  and select Add Graphs.
- ② Press , 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.




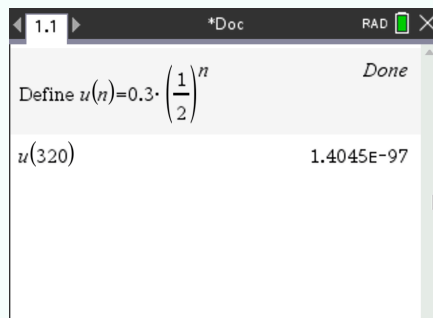
- ④ Press  and the graph of the sequence is displayed.



### 1.3.4 Compute a term of a sequence




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

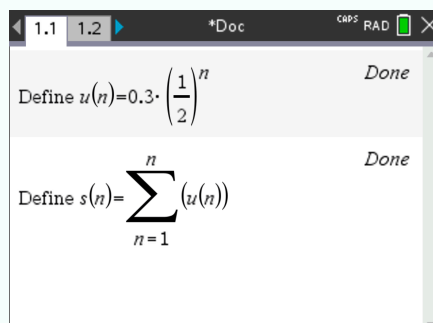
- ① Enter the sequence on your calculator (see ③)
- ② Press  and write 'u(320)' in the following line.



### 1.3.5 Graph a series

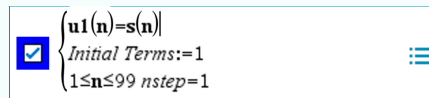
Suppose you want to graph the series of the sequence  $u_n = u_1 * (\frac{1}{2})^n$  with  $u_1 = 0.3$  on your calculator, starting at  $n = 1$  and ending at  $n = 20$ .

- ① Enter the sequence on your calculator and press  .
- ② Enter the series of the sequence in the line below. To do this, define 's(n)=' and press  .  
 .

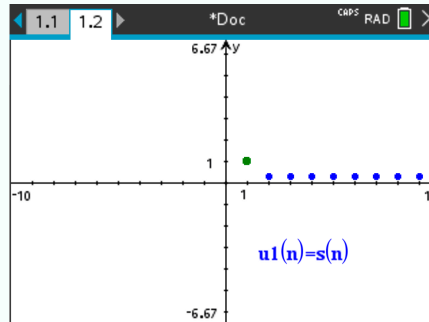


- ③ Create a new document, press  and select Add Graphs.
- ④ Press  , select Graph Entry/Edit > Sequence > Sequence


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



⑥ Press  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  . The result should be 0.3.

