Chapter 1 / **Example 15**
Finding the number of terms in a geometric sequence

Find the number of terms in each of these geometric sequences:

a 0.15, 0.45, 1.35, ⋯ , 12.15 **b** 440, 110, 27.5, ⋯ , 0.4296875

$u_1 = 0.15$, $r = 3$

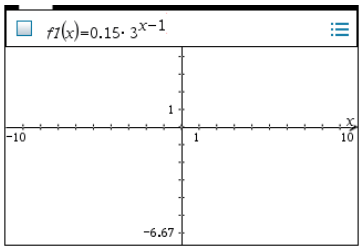
$u_n = 0.15 \times 3^{n-1} = 12.15$

Open a new document and add a Graphs page.

The entry line is displayed at the top of the work area.

The default graph type is function, so '*f1*(*x*)=' is displayed.

Type $0.15 \times 3 \wedge X - 1$ and press enter.



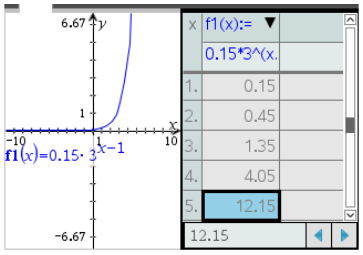
Press ctrl T.

A table of values is displayed alongside a graph.

You can scroll through the table using ▲ and ▼ on the touchpad.

From the table, $Y_1 = 12.15$ when $n = 5$

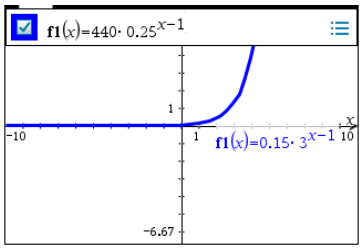
This sequence has 5 terms.



$u_1 = 440$, $r = 0.25$

$u_n = 440 \times 0.25^{n-1} = 0.4296875$

Press ctrl T and press tab to display the equation entry screen. Press ▲ to return to *f1*(*x*)=. Delete the function, type $440 \times 0.25 \wedge X - 1$ and press enter.



Press ctrl T.

A table of values is displayed alongside a graph.

You can scroll through the table using ▲ and ▼ on the touchpad.

From the table, $Y_1 = 0.4296875$ when $n = 6$

This sequence has 6 terms.