

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,  $\dots$ , 12.15**b**      440, 110, 27.5,  $\dots$ , 0.4296875Press **MENU** 7 **TABLE**. Press **F5** SET and change the settings so that the table starts from 1 and ends at 10.Press **EXIT**.

Table Setting

X

Start:1  
End :10  
Step :1

$$u_1 = 0.15, r = 3$$

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

Type  $0.15 \times 3^X - 1$  and press **EXE** to enter the first equation as Y1.Table Func :Y=  
Y1=0.15×3<sup>x-1</sup> [—]  
Y2: [—]  
Y3: [—]  
Y4: [—]  
Y5: [—]  
Y6: [—]  
[SELECT] [DELETE] [TYPE] [STYLE] [SET] [TABLE]Press **F6** TABLE.A table of values is displayed. Scroll down the table using **▼**.From the table,  $Y1 = 12.15$  when  $n = 5$ 

This sequence has 5 terms.

Y1=0.15×3<sup>(x-1)</sup>  
x      Y1  
2      0.45  
3      1.35  
4      4.05  
5      12.15  
12.15  
[FORMULA] [DELETE] [ROW] [EDIT] [GPH-CON] [GPH-PLT]

$$u_1 = 440, r = 0.25$$

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

Press **EXIT** to display the equation entry screen.Type  $440 \times 0.25^X - 1$  and press **EXE** to enter the first equation as Y1.Table Func :Y=  
Y1=440×0.25<sup>x-1</sup> [—]  
Y2: [—]  
Y3: [—]  
Y4: [—]  
Y5: [—]  
Y6: [—]  
[SELECT] [DELETE] [TYPE] [STYLE] [SET] [TABLE]Press **F6** TABLE.A table of values is displayed. Scroll down the table using **▼**.From the table,  $Y1 = 0.4296875$  when  $n = 6$ 

This sequence has 6 terms.

Y1=440×0.25<sup>(x-1)</sup>  
x      Y1  
3      27.5  
4      6.875  
5      1.7187  
6      0.4296  
0.4296875  
[FORMULA] [DELETE] [ROW] [EDIT] [GPH-CON] [GPH-PLT]