

Chapter 1 / **Example 23****Finding the sum of a geometric series**

Determine how many terms are required for the sum of the geometric series given by

$$\sum_{i=1}^n 3 \times 2^i \text{ to exceed } 1000.$$

Press **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

In calculation mode, the fx-CG50 has a summation function, however this is not available when working in table mode. Instead of using the summation function, you must use the

$$\text{result: } \sum_{i=1}^n 3 \times 2^i = \frac{6(1-2^n)}{1-2}.$$

Type  $\frac{6(1-2^X)}{1-2}$  using **□** to add a fraction template. and press **EXE** to enter the first equation as Y1.

Table Func : Y=

$$Y1 = \frac{6(1-2^X)}{1-2} \quad [ \text{---} ]$$

Y2: [ --- ]

Y3: [ --- ]

Y4: [ --- ]

Y5: [ --- ]

[SELECT] [DELETE] [TYPE] [STYLE] [SET] [TABLE]

Press **F6** **TABLE**.

A table of values is displayed. Scroll down the table using **▼**.

The values calculated for the sum are the same in Y<sub>2</sub> as they are in Y<sub>1</sub>.

From the table, when 8 or more terms are added, the sum exceeds 1000.

$$Y1 = \frac{6(1-2^{(X)})}{1-2}$$

X	Y1
5	186
6	378
7	762
8	1530

1530

[FORMULA] [DELETE] [ROW] [EDIT] [GPH-CON] [GPH-PLT]