## Fibonacci sequence



The *Fibonacci sequence*  $F_n$  is defined by the property that  $F_n = F_{n-1} + F_{n-2}$  for every  $n \ge 2$ . We usually require that  $F_0 = F_1 = 1$ .

The sequence begins 1, 1, 2, 3, 5, 8, 13, 21, ...

The numbers in this sequence are called *Fibonacci numbers* and the equation defining the sequence is called the *Fibonacci equation*. The sequence is named after Leonardo Pisano Fibonacci.

The ratio of consecutive Fibonacci numbers tends to the golden ratio,  $\phi$ :

$$\lim_{n \to \infty} \frac{F_{n+1}}{F_n} = \phi = \frac{1 + \sqrt{5}}{2}.$$