

The Fibonacci sequence F_0, F_1, F_2, \dots is defined by $F_0 = 0$, $F_1 = 1$ and, for $n \geq 2$,

$$F_n = F_{n-1} + F_{n-2}.$$

The first few numbers in the Fibonacci sequence are 0, 1, 1, 2, 3, 5, 8, 13, 21, 34.... Find the value of the sum

$$\sum_{n=0}^{\infty} \frac{F_n}{10^n}.$$