Question

It is an amazing fact that $\sum_{k=1}^{\infty} \frac{(-1)^k}{2k+1} = \frac{\pi}{4}$. Which of the following statements is true?

I. $\sum_{k=1}^{n} \frac{(-1)^k}{2k+1}$ is a number close to $\frac{\pi}{4}$ when n is large.

II. $\sum_{k=1}^{1000} \frac{(-1)^k}{2k+1}$ is larger than $\frac{\pi}{4}$.

A. I. only
B. II. only.
C. Neither is true.
D. Both I. and II. are true.