

MATH 104, FALL 2013.
Homework assignment # 9.

1. Suppose that the n th partial sum of a series equals $1/n$, for $n \in \mathbb{N}$. Determine the n th term in that series.

2. Determine whether the series

$$1 + \frac{1}{3} + \frac{1}{5} + \frac{1}{7} + \cdots$$

converges.

3. Determine whether

$$\sum_{n=1}^{\infty} \frac{1}{10^{n!}}$$

is rational.

4. True or false: If $a_k \in \mathbb{C}$, $a_k \rightarrow 0$ and the sequence of partial sums of the series $\sum_{k=1}^{\infty} a_k$ is bounded, then the series converges. Provide a proof or a counterexample.