

Mathematics 3790H – Analysis I: Real analysis
TRENT UNIVERSITY, Winter 2015

Assignment #4

Due on Friday, 6 February, 2015.

Suppose that $\{a_n\}$ is a sequence and $s_n = \frac{a_1 + a_2 + \cdots + a_n}{n}$.

1. Show that if $\lim_{n \rightarrow \infty} a_n$ exists, then $\lim_{n \rightarrow \infty} s_n = \lim_{n \rightarrow \infty} a_n$. [6]
2. Give an example to show that $\{s_n\}$ may have a limit even when $\{a_n\}$ does not. [4]