Mathematics 3790H – Analysis I: Introduction to analysis
Trent University, Winter 2014

Assignment #2
Due on Friday, 24 January, 2014.

1. Prove that if $\lim\limits_{n\to\infty} a_n = L$ and $\lim\limits_{n\to\infty} b_n = M$, then $\lim\limits_{n\to\infty} (a_n + b_n) = L + M$. *[5]*

2. Prove that if $\lim\limits_{n\to\infty} a_n = L \neq 0$, then $\lim\limits_{n\to\infty} \dfrac{1}{a_n} = \dfrac{1}{L}$. *[5]*

NOTE: In both questions, please prove the fact in question directly from the ε–δ definition of limits.