Tutorial 3, Oct. 14

a) WA2 due Monday 2:30

b) Midterm on Monday Oct. 24

1.1 Definition. A sequence $\{a_n\}$ is Cauchy if for every $\epsilon > 0$ there exists an $N_0 in \mathbb{N}$ so that if $n, m \geq N_0$, then

$$|a_n - a_m| < \epsilon.$$

1.2 Question. Let $\{a_n\}$ be such that

$$\lim_{n\to\infty} a_{n+1} - a_n = 0.$$

Is $\{a_n\}$ Cauchy?

Solution. No. e.g.

$$a_n = \sum_{k=1}^{n} \frac{1}{k}$$