Mathematics 3790H – Analysis I: Introduction to analysis
TRENT UNIVERSITY, Winter 2012

Assignment #3
Due on Thursday, 2 February, 2012.

1. Give an example of a sequence a_n which satisfies the condition

For all $\varepsilon > 0$ there is a N such that for all $n \geq N$, $|a_n - a_{n+1}| < \varepsilon$.

but which does *not* converge. *[10]*

HINT: Compare the given condition to the Cauchy Convergence Criterion for sequences (§2.12 in the text). They're *almost* the same ...