PRINT Your Name:_____

Quiz for June 12, 2006

Construct a sequence $\{s_n\}$ for which the set of subsequential limits of the sequence is countable.

ANSWER: Consider the sequence

$$1, 1, 2, 1, 2, 3, 1, 2, 3, 4, 1, 2, 3, 4, 5, 1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6, 7, 1, 2, 3, 4, 5, 6, 7, 8, \dots .$$

This sequence contains the convergent subsequence $n, n, n, n, \dots$ for each natural number n.