

787.03 Summer 2003 Problem Set 2

Due Monday, July 7, 2003.

From the Berkeley book, section 1.3: 4, 5, 9, 12, 13, 16.

From Kaczor and Nowak, V.I, section 2.1: 33, 38, 41.

Given two real numbers a and b , define the recursive sequence $\{a_n\}$ as follows:

$$a_1 = a, \quad a_2 = b, \quad a_{n+1} = \frac{n-1}{n}a_n + \frac{1}{n}a_{n-1}, \quad n \geq 2.$$

Show that the sequence converges and find its limit.