Math 115   Fall, 2011

Professor K. A. Ribet

Assignment due November 17, 2011

Suppose that $\xi = \xi = \langle a_0, a_1, \ldots \rangle$ as in Thursday's lecture. Then $\xi = \lim\limits_{n\to\infty} \dfrac{h_n}{k_n}$ in the notation of the book. In class, I asserted that the convergents $\dfrac{h_n}{k_n}$ behave like the partial sums of an infinite series $\sum(-1)^{n-1}c_n$ in which the c_n are positive real numbers that tend monotonically to 0. (Example: the alternating harmonic series.) On Thursday, a student suggested that ξ could be related to $\sum(-1)^{n-1}\dfrac{1}{k_n k_{n-1}}$. Is this true? If so, what is the exact relation? Is there an especially neat formula in the case where ξ lies in the interval $[0, 1)$?

Problems from the Book:

§7.3, problem 6

§7.4, problems 4, 5

§7.5, problems 3, 4, 6

§7.6, problems 1, 2