Avraham Bourla* (avraham.bourla@trincoll.edu), Department of Mathematics, Trinity College, 300 Summit st., Hartford, CT 06106. Recovering the sequence of approximation coefficients from a pair of successive pairs.

Let \( \{a_n\}^\infty_1 \) be the sequence of digits for the regular continued fraction expansion of an irrational number \( r \) and let \( \{\theta_n\}^\infty_0 \) be its sequence of approximation coefficients (SAC) from Diophantine approximation. We will show that for all irrational numbers and \( n \geq 1 \), there is an integer valued function on two variables, whose value for both \((\theta_{n-1}, \theta_n)\) and \((\theta_{n+1}, \theta_n)\) is \( a_{n+1} \). In tandem with a theorem due to Jurkat and Peyerimhoff, this will prove that there is a real valued function \( f \) on two variables such that \( \theta_{n+1} = f(\theta_{n-1}, \theta_n) \) and \( \theta_{n-1} = f(\theta_{n+1}, \theta_n) \), revealing elegant symmetrical structure. In particular, the entire SAC can be recovered from a single pair of successive terms. (Received September 21, 2011)