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Properties of recursive sequences

This note deals with the role of consecutivity in the determination of new properties and relations for recursive sequences. Lemma 1. Put $f_n = 2^n + 1$. The $f_{43}, f_{44}, \cdots, f_{50}$ are the only eight **consecutive** terms of $\{f_n\}$ with a prime number of **total** prime factors. Lemma 2. Put $g_p = 2^p + 1$, where p is prime. Then $g_3, g_5, \cdots, g_{47}, g_{53}$ are the only 15 **consecutive** terms of $\{g_p\}$ with a prime number of **total** prime factors. Lemma 3. Put $h_p = 3^p + 2p$, where p is prime. Then $h_3, h_5, \cdots, h_{17}, h_{19}$ are the only seven **consecutive** ternms of $\{h_p\}$ with a prime number of **total** prime factors. Problem 1. Given an example of a palindromic sonatina. Problem 2. Characterize the finite groups with a prime number of **solvable** subgroups. Problem 3. Put $k_p = (4^p + 3p)$, where p is prime. Then $k_2, k_3, \cdots, k_{37}, k_{41}$ are the only 13 **consecutive** terms of $\{h_p\}$ with a prime number of **total** prime factors. Problem 4. Give an example of a (validromic) Sestina which backwards is a **different** Sestina.