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Steven H. Weintraub* (shw2@lehigh.edu), Dept. of Mathematics, Lehigh University, Bethlehem, PA 18015. *On the arithmetic theory of continued fractions.*

Let N be an arbitrary positive integer. We consider continued fractions of the form

$$a_0 + \frac{N}{a_1 + \frac{N}{a_2 + \frac{N}{a_3 + \cdots}}},$$

with a_0 a nonnegative integer and a_1, a_2, a_3, \dots positive integers. We compare the situation in the classical case $N = 1$ with that in the case $N > 1$, and find both similarities and surprising differences. We will in particular focus on the question of periodicity of expansions. (Received January 05, 2022)