

1135-F1-2611

Joshua Brandon Holden* (holden@rose-hulman.edu), Department of Mathematics,
Rose-Hulman Institute of Technology, 5500 Wabash Ave., Terre Haute, IN 47803. *Rock Me
Fibonacci: Using Recurrence Relations to Count Rock Drum Fill Patterns*. Preliminary report.

Drum fills are a way of “filling time” during a short break in a rock or pop song, usually using a rapid sequence of notes played in succession across multiple drums in a drum kit. Considering the common configuration known as a five-piece kit, we see that moving from one drum to another is considerably easier in some combinations than others. We construct a set of rules to model patterns which avoid these difficult transitions, and then construct and solve recurrence relations to count the number of n -beat patterns which fit the rules. Variations on the theme are provided by varying the durations of notes and the numbers and types of drum allowed. Warning: Most of the integer sequences will actually be generalizations of the Fibonacci numbers. Expect less “two, three, five, eight” and more “one, two, tres, quatro”. (Received September 26, 2017)