1116-11-919 **John R Greene*** (jgreene@d.umn.edu), Department of Mathematics and Statistics, 140 Solon Campus Center, 1117 University Drive, Duluth, MN 55812-3000, and **Jesse Schmeig**. *A generalization of continued fractions.* Preliminary report.

Maxwell Anselm and Steven Weintraub investigated generalizations of classical continued fractions where the "numerator" 1 was replaced by an arbitrary positive integer. Here, we replace the "numerator" with an arbitrary real number $z \geq 1$. Much of what Anselm and Weintraub found still applies, but with many surprising differences. For example, when z is an integer, every rational number has a finite continued expansion. When $z = \frac{3}{2}$, again every rational number appears to have a finite expansion, but when $z = \frac{5}{3}$, some rational numbers have periodic expansions, and when $z = \frac{11}{8}$, there appear to be rationals with neither finite nor periodic expansions. For expansions of $\sqrt{n}$, Pell's equation often plays a role in the existence of periodic expansions. (Received September 15, 2015)