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Thomas Garrity* (tgarrity@williams.edu), Department of Mathematics and Statistics, Williams College, Williamstown, MA 01267, and **Peter McDonald**. *Minkowski Question Mark Type Functions for a Family of Multi-dimensional Continued Fractions*. Preliminary report.

Over a century ago, Herman Minkowski developed his question mark function, which is a strictly increasing continuous function from the unit interval to the unit interval that sends the set of quadratic irrationalism to the set of rationals. A few decades after his work, it was shown that his function, though strictly increasing, had to have derivative zero almost everywhere, and thus is a naturally occurring singular function. Underlying all the properties of the question mark function is the theory of continued fractions. We will discuss generalizations of the question mark function to a family of multidimensional continued fractions, called triangle partition maps. These maps include the triangle map and the Mönkmayer map. Combinations of these maps include almost all known multidimensional continued fraction algorithms. We will see for each of these maps that there is only one potential candidate for a question mark type function. We mainly discuss which of these algorithms are, in a natural sense, singular and which have other key properties analogous to the original question mark function. (Received September 21, 2016)