1116-16-2513 **Sam Mendelson*** (`smendels@gmu.edu`) and **Geir Agnarsson**. *Matrix Algebras: Equivalent Ring Relations and Special Presentations.*

A classic result in noncommutative ring theory states that a ring R is an $n \times n$ matrix ring if, and only if, R contains n^2 matrix units $\{e_{ij}\}_{1 \leq i,j \leq n}$. In this case $R \cong M_n(S)$ where S is a subring of R that can be described completely in terms of the matrix units. A lesser known result states that a ring R is an $(m+n) \times (m+n)$ matrix ring ($R \cong M_{m+n}(S)$ for some ring S) if and only if, R contains three elements a, b, and f satisfying the two relations $af^m + f^n b = 1$ and $f^{m+n} = 0$. In this talk, we investigate algebras over a commutative ring (or field) with elements c and f satisfying the two relations $c^i f^m + f^n c^j = 1$ and $f^{m+n} = 0$, where $m = n = 1$. We will discuss the structure of the underlying ring S for a general commutative ring A and investigate these algebras over the fields $\mathbb{Q}$ and $\mathbb{F}_p$, where p is prime. (Received September 22, 2015)