

1053-13-201

Thomas G Lucas* (tg1ucas@uncc.edu), Department of Mathematics & Statistics, University of North Carolina Charlotte, Charlotte, NC 28223. *Minimal integral ring extensions.*

For a pair of commutative rings $R \subsetneq S$ with the same identity, S is said to be a minimal integral extension of R if S is integral over R and there are no rings properly between R and S . For a given minimal integral extension $R \subsetneq S$, the conductor $M = (R : S)$ is a maximal ideal of R . Three cases occur: (i) M is a maximal ideal of S , (ii) M is contained in exactly two maximal ideals of S , (iii) M is properly contained in a unique maximal ideal of S . With regard to case (ii), if M is contained in two maximal ideals of S and $\text{Ann}_R(M) \subseteq M$ with $\text{Ann}_R(M) \neq \text{Ann}_S(M)$, then S is isomorphic to $R \times R/M$. For case (iii), if M is properly contained in a unique maximal ideal of S and $\text{Ann}_R(M) \subseteq M$ with $\text{Ann}_R(M) \neq \text{Ann}_S(M)$, then S is isomorphic to the ring $R(+R/M)$ (the idealization of R/M over R) if and only if $\text{Ann}_S(M)^2 = (0)$. (Received September 03, 2009)