

1058-13-99

Thomas G Lucas* (tg^lucas@uncc.edu), Department of Mathematics & Statistics, University of North Carolina Charlotte, Charlotte, NC 28223. *Almost principal ideals in $R[x]$* . Preliminary report.

For an integral domain R , a nonzero ideal I of the polynomial ring $R[x]$ is said to be almost principal if there is a nonconstant polynomial $f(x) \in I$ and a nonzero element $r \in R$ such that $rI \subseteq f(x)R[x]$. If such a pair $f(x)$ and r exists, then $I \cap R = (0)$ and $I \subseteq I_f := f(x)K[x] \cap R[x]$ where K is the quotient field of R . The polynomial ring $R[x]$ is said to be an almost principal ideal domain if each nonzero ideal I of $R[x]$ that contracts to the zero ideal of R is almost principal. It is known that $R[x]$ is an almost principal ideal domain if R is either integrally closed or Noetherian. In the literature, the proofs for these two cases are quite different. One of the main goals here is to provide a proof that takes care of these two cases (and many others) simultaneously. Other domains for which the corresponding polynomial ring is an almost principal ideal domain include all seminormal domains and all domains with the radical trace property. (Received February 08, 2010)