ROCKY MOUNTAIN
JOURNAL OF MATHEMATICS
Volume 28, Number 1, Spring 1998

A CLASS OF PRÜFER DOMAINS THAT ARE SIMILAR TO THE RING OF ENTIRE FUNCTIONS

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1. Introduction. Let R be the ring of entire functions, and let $\mathbf{K}$ be the field of complex numbers. Much is known concerning the algebraic properties of R. For example, Helmer proved [**5**, Theorem 9] that R is a Bezout domain. Henriksen [**6**] proved that R is infinite dimensional and completely characterized the prime ideals. Theorems concerning the algebraic structure of R tend to focus on the sets of zeros of functions in R. Let α be a complex number, and let M_α be the ideal of R generated by $z-\alpha$. Then an entire function $f(z)$ lies in M_α if and only if $f(\alpha)=0$. Hence, properties of the zeros of entire functions are largely embodied in the properties of the ideals M_α. Several additional facts are readily apparent concerning these ideals.

1. Each M_α is maximal in R.
2. R_{M_α} is a Noetherian valuation domain for each $\alpha \in \mathbf{K}$.
3. $R = \cap_{\alpha\in\mathbf{K}} R_{M_\alpha}$.

In this paper we consider a class of Prüfer domains which will be defined by intersecting Noetherian valuation domains in such a way that the centers of the defining valuation domains emulate the ideals M_α of R. These domains, which we call E-domains, have many properties in common with R. In Section 2 we consider some basic properties concerning the prime ideals of E-domains and investigate the structure of divisorial ideals. In each case we will draw comparisons with the structure of R. In Section 3 we show how E-domains can be constructed as overrings of Noetherian domains and investigate the relationship between the ideal structure of an E-domain constructed in this manner and the ideal structure of the underlying Noetherian domain. In Section 4 we consider some explicit examples of E-domains. We also use our knowledge of E-domains to construct an example of a

Received by the editors on October 26, 1994, and in revised form on September 11, 1995.