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A NOTE ON VALUATIONS, p-PRIMES AND THE HOLOMORPHY SUBRING OF A COMMUTATIVE RING

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Introduction. In this note we use a recent result from the theory of valuations to identify p-primes in a special class of commutative rings. Our identification process will also provide the associated field with p-prime in each case. We refer the reader to [**5**], for all definitions pertaining to the p-prime invariants which, due to their length, will not be included here. At the conclusion of this paper we will apply our new information on the structure of all 0-primes to obtain a result on holomorphy subrings which is closely related to some earlier work by the author (see [**4**]).

We take this opportunity to introduce some notation which we will employ throughout this paper. Firstly, all rings will be understood to be commutative and unitary. For an arbitrary subset, S, of a ring R, set

$$I(R,S) = \{r \in R | rS \subseteq S\}$$

and

$$(R:S) = \{r \in R | rR \subseteq S\}.$$

We let $U(R)$ denote the group of units of R, and, in the case R is a domain, $\mathrm{qf}(R)$ will represent the field of fractions of R. For I a prime ideal of R, let R_I be the localization of R at I. If R is assumed to be a local ring with maximal ideal M, then $k(R)$ and π will be used, respectively, to signify the residue class field R/M and the natural projection from R onto this field. Lastly, for $B \subseteq A$ we write $A \backslash B$ for $\{a \in A | a \notin B\}$.

1. Let R be a commutative ring. By a *valuation* of R we will mean a map $v : R \to G^*$, where G^* is a totally ordered abelian (possibly trivial) group which has been extended by ∞, satisfying

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