

1118-13-190

Mark Batell* (mbatell@outlook.com). *On a class of half-factorial domains.* Preliminary report.

Let R be an integral domain. For elements $a, b \in R$, let $[a, b]$ denote their greatest common divisor, if it exists. We say that R has the *Z-property* if whenever a, b, c, d and e are nonzero nonunits of R such that $abc = de$, then $[ab, d] \neq 1$ or $[ab, e] \neq 1$. The purpose of this paper is to study this property. The atomic integral domains that have this property constitute a class of half-factorial domains. Also, it is known that R must have this property in order for the polynomial ring $R[x]$ to be half-factorial. We use it to give a characterization of half-factorial polynomial rings in the case where every v -ideal of the coefficient ring R is v -generated by two elements. We also show that if R is a Krull domain with this property, then R has torsion class group. (Received January 31, 2016)