

Section 1, of this chapter mainly deals with the definition of a generalized unique factorization domain (GURD) as an integral domain in which every non zero non unit is

Obviously if R consists of minimal primes only, the above four conditions define a GKD i.e. Semirigid Domains are another generalization of Krull domains. In Chapter 3, we consider the factorization of an arbitrary non zero non unit in an HOF domain of Krull type and use this study to define Unique Representation Domains. Chapter 4, is mainly concerned with the study of ideal transforms in a GKD and a part of it consists of extensions of results proved in [15]. Acknowledgements. This work has been mainly influenced by the recent developments in Commutative Ring Theory and I am thankful to all the mathematicians involved. My special thanks are due to Professor P.M.Cohn who supervised this work and whose work on Non Commutative Unique Factorization has been a guide for my research. Professor M.Nagata is also thanked for his valuable suggestions that led me to the concept of Unique Representation Domains. Fellow students and the staff of the Mathematics Department have also been kind and helpful. Among fellow students, I feel obliged to mention Warren Dicks whose capability has been a source of inspiration and whose advice exacting and helpful.

$$S_4. R = \bigcup P_\alpha \quad \alpha \in I.$$