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Unique Factorisation for Commutative Rings Without Identity

Abstract: This paper concerns the unique factorisation property in commutative rings not necessarily with identity. We give a new definition of irreducibility and associates in a commutative ring with 1 (crwl), and define a UFR R in terms of a monomorphism from R into a crwl. This becomes equivalent to the definition in [3] when R has an identity. We generalize results on direct sums and direct summands. By our definition we have new members of the family of UFR's.

Key Words: Irreducibility, associates, unique factorisation.