ABSTRACT

TITLE:	Directed Graphs of Commutative Rings with Identity: Expanding Graphs to Understand the Structure of Larger Rings.
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ABSTRACT: Commutative rings' additive and multiplicative structure can be represented with a directed graph in which a, b Zn (the finite ring being examined) and (a, b) (a + b, ab). We researched results pertaining to commutative rings of the form Zp (the 'p' is a subscript) and introduce an expansion concept to understand the behavior of the directed graph of Zp2 (this is subscript 'p' to the second power) to better prepare us to find results about the directed graph for any Zn (subscript 'n').