

1135-13-2104

**David F. Anderson** and **Darrin Weber\*** (dw238@evansville.edu). *Zero-Divisor Graphs on Commutative Rings Without Identity.*

A zero-divisor graph is a graph, denoted  $\Gamma(R)$ , whose vertices are the nonzero zero-divisors of a ring  $R$  and two vertices are connected by an edge if and only if their product is 0. Most of the work on zero-divisor graphs have focused on commutative rings with identity, although several results happen to apply to rings without identity. We focus on the zero-divisor graphs of commutative rings without identity, as well as classify all commutative rings without identity that have zero-divisor graphs on 14 or fewer vertices. (Received September 26, 2017)