

# Review of: "Zero-Divisor Graphs of $\mathbb{Z}_n$ , their products and $D_n$ "

Saleem Watson<sup>1</sup>

<sup>1</sup> California State University, Long Beach

**Potential competing interests:** No potential competing interests to declare.

The article is about zero-divisor graphs of a ring  $R$ , with applications to the rings  $\mathbb{Z}_n$ , as well as applications to finite products of such rings. A zero-divisor graph of a ring is the undirected graph whose vertices are the nonzero zero-divisors of  $R$ , where two distinct vertices are adjacent if their product is zero. This added graph structure on the set of zero-divisors of a ring gives additional information about the ring itself. For the rings  $\mathbb{Z}_n$ , certain properties of their zero-divisor graphs completely determine the possible values of  $n$  (Theorems 2.19, 3.4, 3.19, 4.3). For instance, the graph of the zero-divisors of a ring  $\mathbb{Z}_n$  is complete if and only if  $n$  is the square of a prime  $p$  (Theorem 3.4). The topic of this article is interesting. The authors state and prove several new results and examples. The article provides a useful introduction to the ideas involving zero-divisor graphs. To enhance the utility of the article, I recommend that appropriate definitions be stated in the article in order to make the article reasonably self-contained. (For instance, include definitions of perfect graph, chordal, simplicial vertex, and others.)