THE ZERO-DIVISOR GRAPH OF A FINITE RING

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The notion of the zero-divisor graph of a commutative ring was introduced by I. Beck in [2]. In this paper, all elements of a ring are vertices of the graph. In [1], vertices of the zero-divisor graph are non-zero zero-divisors of a ring. For a noncommutative ring the definition of zero-divisor graph was introduced in [4]. To describe the rings which zero- divisor graphs satisfy a certain condition it has become one of the directions of investigations in this area. The geometric depiction of the zero-divisor graph is rather complicated even for rings of a smaller order. Therefore, it is necessary to partition the vertex set of the graph into cosets so that the impression of the structure of the graph as a whole be preserved. In [3, 5], the authors proposed some method for solving this problem. The report is devoted to the main problems and direction of investigations in this area. Also, we discuss our results concerning these notions.

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