Abstract

Let \( R \) be a commutative ring. The prime graph of the ring \( R \) is defined as a graph whose vertex set consists of all elements of \( R \) and any two distinct vertices \( x \) and \( y \) are adjacent if and only if \( xRy=0 \) or \( yRx=0 \). This graph is denoted by \( PG(R) \). In this paper we investigate some relations between the chromatic number of prime graph of finite product of commutative rings and the chromatic number of prime graph of these rings. We also obtain some results on the chromatic number of prime graph of the ring \( \mathbb{Z}_m \times \mathbb{Z}_n \).

References

Index Terms

Computer Science
Applied Mathematics

Keywords
Prime Graph  Chromatic Numbers  Rings  Product of rings