



INTISARI

Graf *Prime Ideal Sum* atas Ring Komutatif

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Diberikan suatu ring komutatif dengan elemen satuan R . Graf *prime ideal sum* atas ring R , dinotasikan $PIS(R)$, adalah graf dengan simpul-simpul ideal nontrivial dari R serta dua ideal berbeda I dan J bertetangga jika $I + J$ merupakan ideal prima. Pada skripsi ini, akan dikaji hubungan teori graf dengan teori ring melalui definisi graf $PIS(R)$. Beberapa sifat yang akan dibahas meliputi keterhubungan graf, *girth* dan bilangan dominasi dari graf, serta homomorfisma graf. Lebih lanjut, akan dipelajari pula sifat-sifat dari $PIS(\mathbb{Z}_n)$.



ABSTRACT

Prime Ideal Sum Graph of a Commutative Ring

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Let R be a commutative ring with unity. The prime ideal sum graph of R , denoted by $PIS(R)$, is the graph whose vertices are the nontrivial ideals of R , where two distinct ideals I and J are adjacent if their sum $I + J$ is a prime ideal. In this undergraduate thesis, we investigate the relationship between graph theory and ring theory through the definition of the $PIS(R)$ graph. Several graph properties are studied, including graph connectivity, girth, domination number, and graph homomorphisms. Furthermore, the properties of $PIS(\mathbb{Z}_n)$ are also examined.