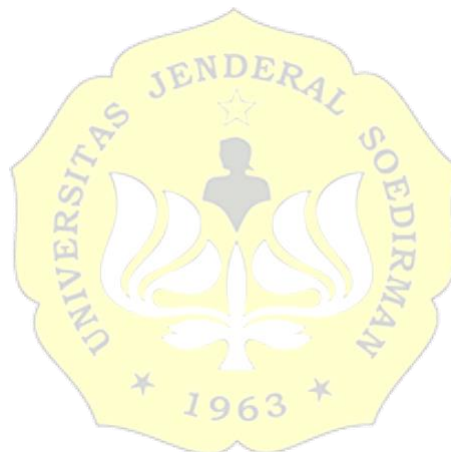


ABSTRAK

Kuaternion merupakan perluasan dari bilangan kompleks. Pada penelitian ini dikaji secara perspektif operasi perkalian kuaternion beserta sifat-sifatnya. Operasi perkalian bersifat tertutup di himpunan kuaternion. Selain itu, operasi perkalian bersifat asosiatif dan distributif tetapi tidak bersifat komutatif. Pada himpunan kuaternion terdapat elemen identitas terhadap perkalian. Dengan adanya elemen identitas ini, setiap kuaternion tak nol mempunyai invers terhadap perkalian. Lebih lanjut, himpunan kuaternion yang dilengkapi dengan operasi penjumlahan dan perkalian merupakan ring.

Kata kunci: bilangan kompleks, ring, perkalian, kuaternion.



ABSTRACT

Quaternion is an extension of complex numbers. In this research, we study perspectively quaternion multiplication operations and their properties. The set of quaternion is closed under multiplication. In addition, multiplication operations are associative and distributive but it is not cumulative. In the quaternion set there is an element of identity to multiplication. This identity element enables every non-zero quaternion for having an inverse to multiplication. Thus, the quaternion set equipped with addition and multiplication operations is a ring.

Keywords: *complex numbers, ring, multiplication, quaternion.*

