

1116-VF-1800 **Jessie Lenarz*** (jklendarz@stkate.edu). *Using Graphs to Examine Benzene-like Structures.*

Benzene is an important structure in chemistry due to its stability and the stability it can provide to a molecule. Benzenoids are structures that have benzene rings in them and can be modeled by a graph composed of hexagons with a perfect matching to indicate the placement of double bonds. The Fries number of a hexagonal system is the maximum number of benzenes in a perfect matching of the system, while a Fries structure is a perfect matching realizing its Fries number. Similarly, the Clar number of a hexagonal system is the maximum number of benzenes in a perfect matching of the system so that no two benzenes are adjacent, while a Clar structure is a perfect matching realizing its Clar number while maintaining the non-adjacency condition. We determined the Fries and Clar numbers for certain hexagonal systems and enumerated the Fries and Clar structures for those systems in an effort to determine the stability of the associated molecules. (Received September 21, 2015)