

1086-VN-1131 **Diana L Smith*** (diana@math.uri.edu). *Defective (3,0,0)-colorings of planar graphs with no 4- or 5-cycles.*

Steinberg's conjecture that every planar graph without 4- or 5-cycles is 3-colorable is still open, although much work has been done leading up to a solution. This problem was relaxed by Raspaud, Chang, Havet, and Montassier (2012) by considering near-colorings of these graphs. A graph is said to be (s_1, s_2, s_3) -colorable if its vertex set can be colored by three colors (1, 2, 3) such that the subgraph induced by the i^{th} color class has degree at most s_i for $i = 1, 2, 3$. Raspaud et al. proved every planar graph without 4- or 5-cycles is $(2, 1, 0)$ -colorable as well as $(4, 0, 0)$ -colorable. We prove in this paper that every such graph is in fact $(3, 0, 0)$ -colorable. (Received September 19, 2012)