

The nonorientable genus of complete tripartite graphs: counterexamples and induction step

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Abstract. In 1976 Stahl and White conjectured that the nonorientable genus of the complete tripartite graph $K_{l,m,n}$, with $l \geq m \geq n$, is $\left\lceil \frac{(l-2)(m+n-2)}{2} \right\rceil$. Recently we, in joint work with Ellingham, Kawarabayashi, and Stephens, have proved that this conjecture is true, with three exceptions: $K_{4,4,1}$, $K_{4,4,3}$, and $K_{3,3,3}$. The proof is by induction on l . In this talk we discuss the induction idea, using an operation we call the ‘diamond sum’, and the small counterexamples.