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The Prettiest Result I Have Seen In the Last Year

Abstract for the Combinatorics Seminar 2013 January 29

Let P be a polygon with n sides and let S and T be triangulations of P using no extra vertices. I will define the notion of a “sequence of signed flips” taking S to T. The Signed Flip Conjecture (SFC) says that such a sequence exists for every n, S and T. I will give the easy argument, modulo Whitney's first theorem in graph theory (1931), that the SFC implies the 4 Color Theorem (4CT).

But searching for a short proof of the 4CT by proving the SFC might be futile if the SFC is false. I will then give the elegant proof by Gravier and Payan that the 4CT implies the SFC. Thus the 4CT and SFC are equivalent, and trying to prove the 4CT through the SFC might be worthwhile.
