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Robert W. Bell* (rbell@math.msu.edu), W-32 Holmes Hall, Lyman Briggs College, Michigan State University, East Lansing, MI 48825. *Combinatorial methods for detecting hyperbolic surface subgroups of right-angled Artin groups.*

Suppose that C_n is a circuit of length n for some $n \geq 5$. Let \overline{C}_n denote the opposite graph. We give a short proof of the following theorem of Kim: if a graph K contains an induced subgraph isomorphic to \overline{C}_n , then the right-angled Artin group $G(K)$ contains the fundamental group of some closed orientable surface of genus at least two. (Received November 19, 2010)