A ROBINSON–SCHENSTED–KNUTH ALGORITHM FOR GRAPH COLORINGS AND P-TABLEAUX

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Abstract. The Robinson–Schensted–Knuth (*RSK*) algorithm is a famous bijection that provides a combinatorial method of a proving an identity from representation theory: the number of permutations of n letters is the same as the number of pairs of standard Young tableaux with n cells of the same shape. In this talk, we will discuss a similar identity from the theory of graph colorings involving a generalization of standard Young tableaux called *P-tableaux*, where P is a poset. Then we will construct a *RSK-like* algorithm that proves this identity combinatorially for certain collections of posets.

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