

YOUNG TABLEAU RECONSTRUCTION VIA MINORS

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ABSTRACT. The tableau reconstruction problem, posed by Monks (2009), asks the following. Starting with a standard Young tableau T , a 1-minor of T is a tableau obtained by first deleting any cell of T , and then performing jeu de taquin slides to fill the resulting gap. This can be iterated to arrive at the set of k -minors of T . The problem is this: given k , what are the values of n such that every tableau of size n can be reconstructed from its set of k -minors? For $k = 1$, the problem was recently solved by Cain and Lehtonen. In this paper, we solve the problem for $k = 2$, proving the sharp lower bound $n \geq 8$. In the case of multisets of k -minors, we also give a lower bound for arbitrary k , as a first step toward a sharp bound in the general multiset case.