Algebra Seminar

Introduction to group representations, IV

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ABSTRACT: In the final lecture of this mini-course, I will first finish the probabilistic proof of the *hook-length formula*. Then I will describe the connection of this material with the representation theory of the symmetric groups S_n. This will involve another graph, the so-called *branching graph*. The crucial fact is that this graph is isomorphic to the Young graph that was discussed in the third lecture. In particular, representation theory tells us that

$$\sum_{\lambda \vdash n} (f^\lambda)^2 = n!$$

where f^λ denotes the number of standard Young tableaux of shape λ. Combinatorially, this identity can be explained by the *Robinson-Schensted correspondence*.

Monday, November 11, 2013
1:40 – 2:30 pm
Room 617, Wachman Hall
Department of Mathematics