Dave Robbins's Art of Guessing

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This is the transcript of my talk given, on June 30, 2003, at Dave Robbins's 60th Birthday Conference, wonderfully organized by Lynne Butler and Clara Chan. Sadly Dave Robbins died about two months later. This article is intended for a Special Issue of Adv. Appl. Math. in memory of Dave

Robbins, guest-edited by Dave Bressoud and Bill Doran.

(Plain) .tex version (17 pages)

.dvi version (for previewing)

.ps version

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IMPORTANT: This article is accompanied by two short Maple progrmams.

- **MRR, listed in the article, that re-enacts, ab initio, Dave Robbins's historic discorvery of Alternating sign matrices. To use it, first download it, saving it as MRR, then stay in the same directory, go into Maple, and type:**
  read MRR:
  The main procedure is MRRp, that

outputs, all the exponent matrices in the Robbins-Rumsey expansion of the lambda-determinant. Here are the outputs of MRRp(n) for n=3, n=4, and n=5.

- **dr, also reproduced in the body of the article, that guesses, *from scratch* the Refined Alternating Matrix Conjecture. It uses, as a subroutine, procedure GuessRat, that is an all-purpose guessing program for rational funtions of several variables. It was written by Drew Sills and myself, and will accompany a forthcoming paper by us. To use file dr, first download both dr and GuessRat (keeping their names), stay in the same directory, go into Maple, and type:**
  read dr:
  then type:
  GuessASM(n,k,4);
  and you will get, after a few seconds, the following output.

Here are the soliciation letter, and checkers' reports.

Doron Zeilberger's List of Papers

Doron Zeilberger's Home Page