Probabilistic Methods in Combinatorics

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Hints for assignment 10

Problem 1. Show that we may suppose that $V_i = \lceil 2ed \rceil$ for every $1 \leq i \leq r$, and pick one vertex in each V_i uniformly at random, independently.

Problem 2. Let $p = \frac{25 \log d}{d}$. Put each vertex in U with probability p, independently. Apply LLL to some suitably chosen bad event.

Problem 3. b) Show first that $\mathbb{E}[\chi(G[U])] \geq 500$ Then apply Azuma-Hoeffding to some well-chosen product probability space.