Randomized Algorithms, WS 2002/03
Problem Set 6
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This homework is due on Friday, Feb. 7.

Problem 6-1
Show that for every constant c there is a constant b such that the recurrence

$$T(m,d) \leq T(m-1,d) + cd + \frac{d}{m}T(m-1,d-1)$$

satisfies the solution $T(m,d) \leq bmd!$.

Problem 6-2
Construct a simple example to show that after one pass through the repeat-until loop of Clarkson1, V may not contain the complete optimal basis B. (Hence, we may only infer that V contains at least one constraint of B that is not already in G.)

Problem 6-3
Show that the Smallest Enclosing Disk problem is an LP-type problem of combinatorial dimension 3 (You may assume that no four points lie on a common circle).