KTH Mathematics

5B5860 INTEGER PROGRAMMING—PRACTICAL ALGORITHMS Spring 2006
Instructor: Anders Forsgren

Homework Assignment 3
Due Tuesday May 2 2006

Exercise 3.1. Solve Exercise II.1.9.1 in *Integer and Combinatorial Optimization*. (Page 256)

Exercise 3.2. Solve Exercise II.1.9.3 in *Integer and Combinatorial Optimization*. (Page 256)

Exercise 3.3. Consider Exercise II.2.6.3 in *Integer and Combinatorial Optimization*. (Page 291)

a) Show that $\dim(\text{conv}(T)) \leq mn + n - m$. (Note that this implies that $\dim(\text{conv}(T)) < mn$ whenever $m > n$.)

b) Choose m and n so that $\dim(\text{conv}(T)) > mn$.
(*Hint:* For appropriate values of m and n, try to find more than $mn + 1$ affinely independent points in T.)

c) Can you make sense of the exercise as stated in the book?

Exercise 3.4. Solve Exercise II.2.6.7 in *Integer and Combinatorial Optimization*. (Page 292)

Exercise 3.5. Solve Exercise II.2.6.10 in *Integer and Combinatorial Optimization*. (Page 293)

Good luck!