**Eidgenössische Technische Hochschule Zürich**
*Ecole polytechnique fédérale de Zurich*
*Politecnico federale di Zurigo*
*Swiss Federal Institute of Technology Zurich*

*Institute for Theoretical Computer Science*
*Dr. B. Gärtner, Dr. M. Hoffmann and Tobias Christ*

*26.11.2009*

# Computational Geometry — Exercise Set 11 — HS09

URL: `http://www.ti.inf.ethz.ch/ew/courses/CG09/`

## Exercise 1

Imagine instead of doubling the slips of the unhappy house owners in the Swiss Algorithm, we would multiply their number by some integer $t \in \mathbb{N}$. Does the analysis of the algorithm improve (i.e., does one get a better bound on the expected number of rounds, following the same approach)?

## Exercise 2

We have shown that for $d = 2$ and sample size $r = 13$, the Swiss algorithm takes an expected number of $O(\log n)$ rounds. Compute the constants, i.e., find numbers $c_1, c_2$ such that the expected number of rounds is always bounded by $c_1 \log_2 n + c_2$. Try to make $c_1$ as small as possible.