Discrete and Computational Geometry, WS1516
Exercise Sheet "10": Last Exercise
University of Bonn, Department of Computer Science I

- *Written solutions have to be prepared until* **Friday 5th of Frebuary, 12:00 pm**.

- *There is a letterbox in front of Room E.01 in the LBH builiding.*

- *You may work in groups of at most two participants.*

Exercise 17:   Cyclic Polytopes   (4 Points)

Let V be a finite subset of the moment curve. Please prove that all the points of V are vertices of conv(V). (Hint: each of them contributes to at least one facet)

Exercise 18:   Probabilistic Tools   (4 Points)

Let H a set of n element, and R and T be two random subsets of H, where $|R| = r$, $|T| = k$, and $k < r < n$. Please prove the followings

- The probability that $R \cap T \neq \emptyset$ is $O(kr/n)$.

- If $n > 2r$, the probability that $R \cap T = \emptyset$ is $O(e^{-\frac{k}{n}r})$