1026-52-168   **Gábor Fejes Tóth*** (`gfejes@renyi.hu`), Rényi Institute, POBox 127, Budapest, 1364, Hungary. *The moment theorem for convex sets.*

We prove the following

Theorem. *Let R be a convex domain and P a set of $n \geq 2$ points in the plane. Let H be a regular hexagon centered at the origin with $\mathrm{area}\,(H) = \mathrm{area}\,(R)/n$. Then we have for any non-increasing function f defined for non-negative reals*

$$\int_R f(\min_{p \in P} \|p - x\|\,dx \leq n \int_H f\|x\|\,dx.$$

For a non-decreasing function f the inequality stands with the reversed sign.

This is a generalization of the "moment theorem" which was proved previously for the case when R is a convex polygon with at most six sides. (Received February 26, 2007)