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Gábor Fejes Tóth* (gfejes@renyi.hu), Rényi Institute of Mathematics, Hungarian Academy of Sciences, Reáltanoda u. 13-15, 1053 Budapest, Hungary. *Remarks on the Moment Theorem.*

Preliminary report.

For a domain D , a point p and a function f the integral

$$M_f(D, p) = \int_D f(px) dx$$

is called the *moment* of D with respect to p taken with the function f . Here px denotes the distance of x to p . The Moment Theorem of László Fejes Tóth states the following: *Let H be a convex polygon in E^2 with at most six sides and f a non-increasing function defined for non negative reals. Let p_1, \dots, p_n be distinct points and let D_i be the Dirichlet cell of p_i relative to H . Then we have*

$$\sum_{i=1}^n M_f(D_i, p_i) \leq n M_f(H_n, o),$$

where H_n is a regular hexagon of area $a(H_n) = a(H)/n$ centered at o . We extend the theorem to the case when $n \geq 2$ and H is an arbitrary convex body. We also give an alternative proof of a theorem of Peter Gruber establishing a stability criterion to the moment theorem. (Received October 03, 2000)