1026-52-53 **Jiazu Zhou*** (zhoujz@swu.edu.cn), School of Mathematics and Statistics, Southwest University, Chongqing, 400715, Peoples Rep of China, and **Deshuo Jiang**, School of Math. and Statis, Wuhan University, Wuhan, 430072, Peoples Rep of China. *The Ros' theorem for convex domain.* Preliminary report.

Let Σ be a compact embedded hypersurface surface in R^n bounding a domain D of volume V. If the mean curvature H of Σ is positive everywhere, then we have the Ros' inequality:

$$\int_\Sigma \frac{1}{H} dA \geq nV,$$

where dA is the volume element of Σ. Equality holds when Σ is a standard $(n-1)$-sphere. For the case of R^3, the equality holds if and only if the surface Σ is the unit sphere. The Ros' theorem (when $n=3$) has been reproved and generalized to higher dimensions by known mathematicians. If we consider the convex bodies with the smooth boundaries in $\mathbb{R}^n$ the proof of the Ros's theorem would be simplified. We have a more stronger results than Ros'.

Theorem. *Let Σ be a compact embedded convex hypersurface in R^n bounding a convex body K of volume V and area A. Let W_2 be the second Minkowski quermassintegrale of K. If the mean curvature H of Σ is positive everywhere, then*

$$\int_\Sigma \frac{1}{H} dA \geq \frac{A^2}{nW_2}. \tag{1}$$

Equality holds if and only if Σ is a standard hypersphere.

One may conjecture that the positivity of the mean curvature would be stronger enough to guarantee the convexity of the domain. (Received February 01, 2007)