American Mathematical Monthly, 2002, 109, no. 7, p. 664.
'Problem and Solution' section.

Problem 10957. (*Proposed by Victor Alexandrov, Sobolev Institute of Mathematics, Novosibirsk, Russia*). Let S^2 be a unit sphere in $\mathbb{R}^3$. Let D be a domain in S^2 with piece-wise smooth boundary. Let $\hat{N}$ denote the the function on the sphere that maps each point to the unit inward normal vector at that point. Let $\hat{n}$ denote the function on the smooth part of the boundary ∂D of D that maps each such point to the inward unit vector normal to ∂D, and parallel to the plane tangent to the sphere at that point. Let σ be the usual measure on a sphere, and let s be the arc length measure on the boundary of D. Prove that

$$2\iint_D \hat{N}\,d\sigma + \int_{\partial D} \hat{n}\,ds = 0.$$