Title: Simplices of maximum volume contained in the unit ball of a normed space

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We prove that if Δ is a simplex of the maximum possible volume contained in the unit ball of an n-dimensional normed space, then $\sum_{i=0}^{n} w_i^{-1} = n$, where w_i is the width (in the sense of the norm) of Δ in the direction perpendicular to the i-th facet of Δ. Moreover, we prove that all the sides of any triangle of the maximum area contained in the unit disk of any 2-dimensional normed plane are of the lengths (in the sense of the norm) at least $\sqrt{2}$. This value cannot be increased as is shown by the example of the normed plane whose unit disk is the regular octagon. We also estimate the perimeter (in the sense of the norm) of this triangle.

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