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Daniel N Dadush* (dndadush@gmail.com), 1715 Defoor Ave NW, Apt A, Atlanta, GA 30318, and **Vempala S Santosh**. *An Elementary Technique to Prove some Basic Inequalities in Convex Geometry*.

The development of convex geometry has led to the discovery of some striking inequalities: the Brunn-Minkowski inequality, Grunbaum's theorem, the Milman-Pajor inequality. It is common in proving geometric inequalities to identify the corresponding "worst-case" convex body from which the inequality follows by explicit computation. In particular, n-dimensional cones and truncated cones appear as worst-case bodies for many of the basic geometric inequalities. The general strategy in these cases usually involves a reduction to a one-dimensional inequality followed by an often tedious and unenlightening sequence of computations. The purpose of this research is to illustrate a simple geometric technique that naturally exhibits cones and truncated cones as "worst-cases" in the one-dimensional setting. We apply this technique to rederive some basic inequalities as well as to prove some new ones. (Received October 07, 2008)