1114-97-39 **Melissa A. Riddle*** (melissariddle@csu.fullerton.edu), 800 N State College Blvd, 154 McCarthy Hall, Fullerton, CA 92620-0290. *Which inequalities are important for gifted high school students?*

The theory of analytic inequalities in advanced mathematics is of crucial importance. It's known that the triangle inequality in the n-dimensional Euclidean space reduces to Cauchy-Schwarz inequality. The idea to present elements of the more advanced theory of inequalities to Math Circle students is not new, since inequalities have been asked for several decades in various mathematical competitions all around the world. While working for the Fullerton Mathematical Circle, I reflected on the question: which inequalities are important? I will present a way of generating new inequalities based on a common pattern, and show how they are all related to the triangle inequality. We also illustrate how our Fullerton Mathematical Circle high-school students respond to such techniques. (Received July 11, 2015)