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Alan Horwitz* (alh4@psu.edu), 25 Yearsley Mill Rd., Media, PA 19063. *Ellipses inscribed in, and circumscribed about, convex quadrilaterals.*

We discuss some results related to ellipses inscribed in, and circumscribed about, a convex quadrilateral, D , in the plane. In particular, we discuss Steiner's nice characterization of the most nearly circular ellipse which passes through the vertices of D . We also prove that there is a unique ellipse of minimal eccentricity, and a unique ellipse of maximal area, which passes through the vertices of D . Finally, if D is a parallelogram, let E be the unique ellipse of minimal eccentricity inscribed in D . We prove that that the smallest nonnegative angle between equal conjugate diameters of E equals the smallest nonnegative angle between the diagonals of D . (Received September 16, 2008)