1035-Z1-1467     **J. Marshall Ash\*** (`mash@math.depaul.edu`), 2320 N. Kenmore, Chicago, IL 60614, and **Michael A. Ash** and **Peter F. Ash**. *A quadrilateral inside another one.*

Connect each vertex of a convex quadrilateral $Q$ to the midpoint of the next (proceeding counterclockwise) side. The four connecting lines create an interior quadrilateral $I$. The ratio $area(I)/area(Q)$ can take any value in the interval $(1/6, 1/5]$. More generally, we determine what happens to $area(I)/area(Q)$ when the four midpoints are replaced by points which divide the sides in the ratio of $\rho$ to $(1 - \rho)$ proceeding clockwise. Here $\rho$ is any fixed number satisfying $0 < \rho < 1$. We also give a geometric characterization of the set of all quadrilaterals with maximal ratio. (Received September 19, 2007)