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Anthony Geramita and **Brian Harbourne*** (bharbour@math.unl.edu), Math Department, University of Nebraska-Lincoln, Lincoln, NE 68588-0130, and **Juan Migliore**. *What's special about points in special position, from the point of view of matroids and Hilbert functions.*

Prompted by questions raised in a paper of Geramita, Migliore and Sabourin, among other results and methods we use a matroid-like approach to classify up to eight points in special position in the plane. The methods also apply to any number of points if they lie on a conic. As a corollary, we give an explicit method for writing down all Hilbert functions of symbolic powers of any ideal of points in the plane, as long as either the points lie on a conic or there are at most eight points. (Received February 12, 2006)