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Chapter 3 - Approximation
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Problem 1. Assume an approximating polynomial of degree n in the method of least squares, and suppose that the points (x_i, y_i), for $i = 1, 2, \ldots, m$ with $m > n$, have the property that $x_i \neq x_j$ for $i \neq j$. Show that the columns of the coefficient matrix A are linearly independent, where the normal equations defining the polynomial are $A^T Aa = A^T y$.

Proof. ■