1145-VQ-1390 **Rafael Bru**, **María T Gassó**, **Isabel Giménez** and **Máximo Santana***
(msantana22@uasd.edu.do), Instituto de Matemática, Universidad Autónoma de Santo Domingo, 10105 Santo Domingo, Dominican Rep. *Diagonal entries of the combined matrix of a totally negative matrix.*

The combined matrix of a nonsingular matrix A is the Hadamard (entrywise) product $A \circ (A^{-1})^T$. This paper deals with the characterization of the diagonal entries of a combined matrix $C(A)$ of a given nonsingular real matrix A. A partial answer describing the diagonal entries of $C(A)$ in the positive definite case was given by Fiedler in 1964. Recently in 2011, Fiedler and Markham characterized the sequence of diagonal entries of the combined matrix $C(A)$ for any totally positive matrix A when the size is 3. For this case, we characterize totally negative matrices and we find necessary and sufficient conditions for the sequence of diagonal entries of $C(A)$, in both cases, symmetric and nonsymmetric. (Received September 21, 2018)