Case 36

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The supports of the minimal zeros are given by $\{1,2\},\{1,3\},\{1,4\},\{2,5\},\{4,5\},\{3,6\},\{5,6\}$. This determines all off-diagonal elements, leading to the matrix

$$A = \begin{pmatrix} 1 & -1 & -1 & -1 & 1 & 1 \\ -1 & 1 & 1 & 1 & -1 & 1 \\ -1 & 1 & 1 & 1 & 1 & -1 \\ -1 & 1 & 1 & 1 & -1 & 1 \\ 1 & -1 & 1 & -1 & 1 & -1 \\ 1 & 1 & -1 & 1 & -1 & 1 \end{pmatrix}.$$

This matrix is copositive as well as extremal by the criteria of Hoffman and Pereira for matrices with ± 1 entries. This matrix has also been found by Baumert.

Note that columns 2 and 4 are identical. The matrix A is actually obtained by permuting the rows and columns of the Horn form and doubling a row and a column.