Practice problems.

(a) Find the characteristic polynomial and e-values of the following matrix.

$$A = \begin{bmatrix} 1 & 5 & 8 & 10 \\ 0 & 2 & 6 & 9 \\ 0 & 0 & 3 & 7 \\ 0 & 0 & 0 & 4 \end{bmatrix}.$$

(b) Now find the characteristic polynomial and e-values of A^T, where A is the matrix from (a).

(c) Find the characteristic polynomial and e-values of the following matrix.

$$A = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}.$$

(d) How are the e-values of M related to the e-values of $2M$?