

Math 54 Worksheet 17
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1. Find all real eigenvalues of the matrix, and find bases for the corresponding eigenspaces.

(a) $A = \begin{pmatrix} -1 & 0 \\ 0 & 5 \end{pmatrix}$

(b) $A = \begin{pmatrix} -1 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 5 \end{pmatrix}$

(c) $A = \begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix}$

(d) $A = \begin{pmatrix} 1 & 2 & 0 \\ 2 & 1 & 0 \\ 0 & 0 & 3 \end{pmatrix}$

(e) $A = \begin{pmatrix} 1 & 2 & 0 & 0 \\ 2 & 1 & 0 & 0 \\ 0 & 0 & 1 & 2 \\ 0 & 0 & 2 & 1 \end{pmatrix}$