

Handwritten HW 24

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17. Diagonalize the matrix, if possible.

$$\begin{bmatrix} 4 & 0 & 0 \\ 1 & 4 & 0 \\ 0 & 0 & 5 \end{bmatrix}$$

Solution:

19. Diagonalize the matrix, if possible.

$$\begin{bmatrix} 5 & -3 & 0 & 9 \\ 0 & 3 & 1 & -2 \\ 0 & 0 & 2 & 0 \\ 0 & 0 & 0 & 2 \end{bmatrix}$$

Solution:

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32. A is a 7×7 matrix with three eigenvalues. One eigenspace is two-dimensional, and one of the other eigenspaces is three-dimensional. Is it possible that A is *not* diagonalizable? Justify your answer.

Solution:

38. Construct a nondiagonal 2×2 matrix that is diagonalizable but not invertible.

Solution: