

Homework 10

MATH 430

This homework will not be graded and so you need not turn it in. However, you should work out the problems since the topic covered here is included in the final.

Jordan Canonical Forms. Find a transformation matrix M that would reduce A to Jordan form, i.e., find M such that $M^{-1}AM = J$ where J is in Jordan form. Indicate the Jordan blocks.

1.

$$A = \begin{bmatrix} -1 & -1 & 0 \\ 0 & -1 & -2 \\ 0 & 0 & -1 \end{bmatrix}$$

2.

$$A = \begin{bmatrix} 1 & 0 & 0 \\ -1 & 2 & 0 \\ 1 & 1 & 2 \end{bmatrix}$$

3.

$$A = \begin{bmatrix} 0 & -3 & 1 & 2 \\ -2 & 1 & -1 & 2 \\ -2 & 1 & -1 & 2 \\ -2 & -3 & 1 & 4 \end{bmatrix}$$

4.

$$A = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 0 & 2 & 1 & 0 \\ 0 & 0 & 0 & 2 \end{bmatrix}$$