

Homework 25 MATH 304 Section 3

Assigned: Wednesday, November 26.

Potentially Collected: Wednesday, December 3.

1. Which of the following matrices are diagonalizable?

(a) $\begin{bmatrix} 1 & 4 \\ 1 & -2 \end{bmatrix}$

(b) $\begin{bmatrix} 1 & 0 \\ -2 & 1 \end{bmatrix}$

(c) $\begin{bmatrix} 1 & 1 & -2 \\ 4 & 0 & 4 \\ 1 & -1 & 4 \end{bmatrix}$

2. Let $A = \begin{bmatrix} 3 & -5 \\ 1 & -3 \end{bmatrix}$. Compute A^9 by finding a matrix P such that $P^{-1}AP$ is a diagonal matrix D and show that $A^9 = PD^9P^{-1}$.