

Math 122-002 201730
Practice Assignment # 8

*Please remember that the assignment consists of only a sample of the kind of questions you are supposed to be able to do. It is **not** a safe practice to just do the assignment, and that is why there is a list of “suggested practice problems”.*

1. In each case find the characteristic polynomial, eigenvalues, eigenvectors, and—if possible—an invertible matrix P such that $P^{-1}AP$ is diagonal.

(a) $A = \begin{bmatrix} 1 & 2 \\ 3 & 2 \end{bmatrix}$

(b) $A = \begin{bmatrix} 7 & 0 & -4 \\ 0 & 5 & 0 \\ 5 & 0 & -2 \end{bmatrix}$.

2. Diagonalize A and use this information to find A^{10} .

(a) $A = \begin{bmatrix} -6 & 11 & -4 \\ -8 & 13 & -4 \\ -11 & 17 & -5 \end{bmatrix}$

(b) $A = \begin{bmatrix} 9 & -1 & -8 \\ 3 & 5 & -8 \\ 0 & 0 & 6 \end{bmatrix}$.