

Math 1553 Worksheet §6.4

1. For each of the following matrices A , decide if A is diagonalizable. If it is, find an invertible matrix P and a diagonal matrix D such that $A = PDP^{-1}$. (Use a calculator to compute the characteristic polynomial and to do row reduction.) Hint: 3 is an eigenvalue of both matrices.

$$\text{a) } A = \begin{pmatrix} 8 & 36 & 62 \\ -6 & -34 & -62 \\ 3 & 18 & 33 \end{pmatrix} \quad \text{b) } A = \begin{pmatrix} 12 & 68 & 118 \\ -17 & -122 & -216 \\ 9 & 66 & 117 \end{pmatrix}$$