

Quiz 17

- (1) Determine which of the following matrices are diagonalizable. You do not need to actually diagonalize them, but do explain how you know whether or not they are diagonalizable.

(a) $A = \begin{pmatrix} 1 & 0 \\ 2 & 3 \end{pmatrix}$

(b) $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$

(c) $A = \begin{pmatrix} 1 & 1 \\ -1 & 3 \end{pmatrix}$

- (2) Find a suitable basis $\rho = (\mathbf{p}_1, \mathbf{p}_2)$ of eigenvectors for the matrix $A = \begin{pmatrix} 2 & -6 \\ -1 & 3 \end{pmatrix}$ such that $[A]_\rho$ is diagonal.