Linear Algebra, EE 10810/EECS 205004

Quiz 6.5

Student ID: ....; Your Name: ....

(Dated: January 6th, 2020)

Integrity: There is NO space to cross the **Red Line** !!

1. For the following matrix $\overline{\overline{A}}$, find an orthogonal or unitary matrix $\overline{\overline{P}}$ and a diagonal matrix $\overline{\overline{D}}$ such that $\overline{\overline{P}}^{*}\overline{\overline{AP}} = \overline{\overline{D}}$:

    (a)

    $$\begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} \tag{1}$$

    (b)

    $$\begin{pmatrix} 2 & 3-3i \\ 3+3i & 5 \end{pmatrix} \tag{2}$$