QUIZ 8 - MATH 310   Thursday, April 25
YOUR NAME:_____   George Voutsadakis

Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [2 points] Suppose that, in solving the system $\boldsymbol{x}' = A\boldsymbol{x}$, you found a complex eigenvalue $\rho = \lambda + i\mu$ and an associated eigenvector $\boldsymbol{\xi} = \boldsymbol{a} + i\boldsymbol{b}$. Show the steps to rewrite the part of the solution corresponding to this eigenvalue (without the preceding constant) in real form.

2. [5 points] Solve the system $x' = \begin{pmatrix} 5 & -10 \\ -2 & 1 \end{pmatrix} x.$

3. [5 points] Solve the system $x' = \begin{pmatrix} 1 & -1 \\ 1 & 3 \end{pmatrix} x$.