**Math 274 Quiz 11**                                              **Name:** _____

Sections: 9.5,9.6                                        Point values in ⟦boxes⟧.

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1. Consider
$$\mathbf{A} = \begin{bmatrix} 1 & 3 \\ 2 & 2 \end{bmatrix}.$$

   (a) ⟦5⟧ Find the eigenvalues and corresponding eigenvectors for $\mathbf{A}$.

   (b) ⟦2⟧ Find a general solution to $\mathbf{x}' = \mathbf{A}\mathbf{x}$.

2. ⟦3⟧ The real valued matrix $\mathbf{B}$ has an eigenvalue $r = 1 + 2i$ with a corresponding eigenvector $\mathbf{u} = \begin{bmatrix} 1 + 2i \\ 3 \end{bmatrix}$. Find a general solution to $\mathbf{x}' = \mathbf{B}\mathbf{x}$.