

## QUIZ 10 - MATH 310

Thursday, December 5

YOUR NAME: \_\_\_\_\_

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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. [4 points] Find the particular solution of the initial value problem

$$\mathbf{y}' = \begin{pmatrix} -1 & 1 \\ -1 & -3 \end{pmatrix} \mathbf{y}, \quad \mathbf{y}(0) = \begin{pmatrix} 3 \\ 5 \end{pmatrix}.$$

2. [6 points] Find the general solution of the system

$$\mathbf{y}' = \begin{pmatrix} 1 & 0 & 2 \\ -1 & 1 & 3 \\ 0 & 0 & 2 \end{pmatrix} \mathbf{y}.$$