

NAME: _____ ID: _____ Section: _____

Exercise 1 (7 points) Find a general solution of the system $Y' = AY$, where $A = \begin{bmatrix} 2 & 1 & 1 \\ 0 & 1 & 0 \\ 0 & 1 & 2 \end{bmatrix}$

Exercise 2 (3 points) Convert the differential equation $y'' + y' + y = x + e^x$, to a system of first-order
(DO NOT SOLVE THE SYSTEM)

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Exercise 1 (7 points) Find a general solution of the system $Y' = AY$, where $A = \begin{bmatrix} 1 & 0 & 0 \\ 2 & 1 & 2 \\ 2 & 0 & 2 \end{bmatrix}$

Exercise 2 (3 points) Convert the differential equation $y'' + 2y' + y = \sin x + e^x$, to a system of first-order
(DO NOT SOLVE THE SYSTEM)

