

1. [15 points] For each of the following, find explicit, real-valued solutions, as indicated.
- a. [7 points] The general solution to $x' = 3y$, $y' = 2x + y$

b. [8 points] The solution to $\mathbf{x}' = \begin{pmatrix} 0 & -2 \\ 2 & -4 \end{pmatrix} \mathbf{x}$, $\mathbf{x}(0) = \begin{pmatrix} 3 \\ 0 \end{pmatrix}$.