

4. [15 points] Find explicit, real-valued solutions to the following, as indicated.
- a. [8 points] $x' = x + 2y$, $y' = 3x - 4y$, $x(0) = 1$, $y(0) = 4$.

b. [7 points] $\mathbf{x}' = \begin{pmatrix} 1 & 1 \\ -8 & -3 \end{pmatrix} \mathbf{x}$.