Math 274 | Matrix Thing | Name: _____

Due: 16 Apr 2019 | Show Appropriate Work | Point Values in $\boxed{\text{boxes}}$.

1. $\boxed{2}$ Find a fundamental matrix for the system

$$\mathbf{x}'(t) = \begin{bmatrix} -3 & -2 \\ 3 & 4 \end{bmatrix} \mathbf{x}(t).$$

2. $\boxed{3}$ Find the solution of the initial value problem

$$\begin{aligned} x' &= x - 2y, & x(0) &= 3 \\ y' &= 4x - 3y, & y(0) &= 5. \end{aligned}$$

3. $\boxed{5}$ Find a fundamental solution set for the system

$$\begin{aligned} x' &= x + 2y - z \\ y' &= y + z \\ z' &= -y + z. \end{aligned}$$