MATH 266B FALL 2008 PRACTICE TEST #2

For maximal credit, show all working. Box or underline your final answers.

(1) **[5 pts.]**

Solve the Initial Value Problem
$$\mathbf{x}' = \begin{bmatrix} 3 & -4 \\ 1 & -1 \end{bmatrix} \mathbf{x}$$
with $x_1(0) = -1$ and $x_2(0) = 3$.

(2) **[5 pts.]**

Find the general solution to the system
$$\mathbf{x}' = \begin{bmatrix} -7 & -10 \\ 5 & 8 \end{bmatrix} \mathbf{x} .$$

(3) **[5 pts.]**

Find the general solution to the system
$$\mathbf{x}' = \begin{bmatrix} -2 & 3 & 0 \\ 0 & 1 & 0 \\ 0 & -1 & 2 \end{bmatrix} \mathbf{x} .$$