

NAME: _____
(Last, First)

1. The coefficient matrix of the following consistent system is already in reduced row echelon form. Identify the dependent variables and the free variables. Solve the system, and express your answer as a subset of \mathbf{R}^4 , so $(x_1, x_2, x_3, x_4) = \dots$

$$\begin{aligned}x_1 - 2x_2 + x_4 &= 0 \\x_3 - 2x_4 &= 0\end{aligned}$$

2. If A is the coefficient matrix of the system in Problem 1, find a spanning set for the space of solutions. You should not repeat work done in Problem 1, which already solves almost all of this question.

3. Find the coefficient matrix A of the following system of equations, and find its inverse matrix A^{-1} .

$$3x_1 - 4x_2 = 1$$

$$2x_1 - 5x_2 = 3$$

4. Use your answer to problem 3 (the inverse matrix) to find the solution to the system of equations.