

Last name _____

First name _____

LARSON—MATH 310—WORKSHEET 4
Non-Homogenous and Homogenous Systems, Non-singular and Singular
Matrices

1. Find all solutions for the following non-homogenous system:

$$\begin{array}{rcl} x & +2y & = 1 \\ 5x & +10y & = 5 \end{array}$$

2. Now find all solutions for the corresponding homogenous system:

$$\begin{array}{rcl} x & +2y & = 0 \\ 5x & +10y & = 0 \end{array}$$

3. Determine if the following matrix is singular or non-singular.

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$$

4. Determine if the following matrix is singular or non-singular.

$$\begin{pmatrix} 1 & 2 \\ 3 & 6 \end{pmatrix}$$