Recitation 1

September 1, 2015

Problem 1. Find the point of intersection of the two lines in the plane given by equations $x_1 + 2x_2 = 2$ and $-2x_1 - 3x_2 = 4$.

Problem 2. Do the three planes $x_1 + x_2 + x_3 = 0$, $x_1 - x_2 + 3x_3 = 0$ and $-2x_1 + 2x_2 - 5x_3 = 1$ intersect? (Use the augmented matrix of the system).

Problem 3. Determine the values of h for which the following matrix is an augmented matrix of a consistent system of equations:

$$\begin{bmatrix} 1 & h & -3 \\ -2 & 4 & 6 \end{bmatrix}$$

Problem 4. Find parameters g, h, k making the augmented matrix correspond to a consistent system:

$$\begin{bmatrix} 1 & -4 & 7 & g \\ 0 & 3 & -5 & h \\ -2 & 5 & -9 & k \end{bmatrix}$$

Problem 5. Describe the set of solutions of a system of linear equations, whose augmented matrix is the following:

$$\begin{bmatrix} 1 & 3 & 5 & 0 \\ 0 & 2 & 4 & 6 \\ -3 & -5 & -9 & 2 \end{bmatrix}$$