

Homework - June 19  
Section 2.2

6. From problem 3, we have  $A^{-1} = \begin{bmatrix} 1 & 1 \\ -7/5 & -8/5 \end{bmatrix}$ . We know  $\mathbf{x} = A^{-1}\mathbf{b}$ , so

$$\mathbf{x} = \begin{bmatrix} 1 & 1 \\ -7/5 & -8/5 \end{bmatrix} \begin{bmatrix} -9 \\ 11 \end{bmatrix} = \begin{bmatrix} 2 \\ 5 \end{bmatrix}.$$

22. The columns of  $A$  are a spanning set of  $\mathbb{R}^n$  when  $A$  is invertible. If  $A$  has an inverse,  $A$  is row equivalent to the identity matrix, i.e. a matrix that has a pivot in every row. Therefore,  $A$  spans  $\mathbb{R}^n$ .