Math 411 Spring 2016 Homework #9

Due April 5, Tue in class

1. Textbook, 5.A, page 138: 7, 15, 18;
2. Let A be an $n \times n$ matrix. Show that A is invertible if and only if it has no zero eigenvalue.
3. Fix the vector $x \in \mathbb{R}^n$. Define the matrix set $E = \{A \in \mathbb{R}^{m\times n} \mid Ax = 0\}$.
   (1) Show that E is a subspace of $\mathbb{R}^{m\times n}$;
   (2) Suppose $x \neq 0$. Find the dimension of E, and justify your answer.

More practice problems: *Do not submit*

1. Textbook, 5.A, page 138: 22;