Due: April 9th

1. Do Exercise 9.2.J in the text.
2. Do Exercise 9.2.K in the text.
3. Fix an $n \times n$ matrix A and $b \in \mathbb{R}^n$. Define $T : \mathbb{R}^n \to \mathbb{R}^n$ by $T(x) = Ax + b$. If $\mathbb{R}^n$ is given the 1-norm $\|(x_1, x_2, \ldots, x_n)\|_1 = |x_1| + |x_2| + \cdots + |x_n|$, then show that T is a contraction if and only if
$$\max_j \sum_{i=1}^{n} |a_{ij}| < 1.$$
4. Do Exercise 11.7.A in the text.
5. Do Exercise 11.7.G in the text, but **not** part (e).