Second Homework: MATH 410
Due Wednesday, 15 September 2010

1. Exercise 1 of Section 2.1 in the text.
2. Exercise 2 of Section 2.1 in the text.
3. Exercise 10 of Section 2.1 in the text.
4. Exercise 1 of Section 2.2 in the text.
5. Exercise 3 of Section 2.2 in the text.
6. Exercise 5 of Section 2.2 in the text.
7. Exercise 1 of Section 2.3 in the text.
8. Exercise 2 of Section 2.3 in the text.
9. Exercise 7 of Section 2.3 in the text.
10. Show that $\cos(k) > .5$ frequently, but not eventually.
11. Prove Proposition 2.5 in the notes.
12. Let $\{a_k\}$ be a monotonic sequence in $\mathbb{R}$. Then $\{a_k\}$ is convergent if and only if it has a convergent subsequence.