1. Let \((x_n)\) be a sequence that is not bounded above. Show that there is a subsequence \((x_{n_k})\) such that \(\lim(x_{n_k}) = \infty\).

2. Sec. 4.1 problem 8. See hint in back of book. In this problem it helps to multiply \(|\sqrt{x} - \sqrt{c}|\) by \(\frac{\sqrt{x} + \sqrt{c}}{\sqrt{x} + \sqrt{c}}\).

3. Sec. 4.1 problem 14. For part (b) you will find Theorem 2.4.8 and Corollary 2.4.9 helpful.