Exercise (2.6.2)**.** *Note the comments under the listing of the theorem on page 59. Let x be the limit of the sequence. Add and subtract x within the absolute value expression.*

Exercise (2.6.3)**.** *One of the sequences we discussed in class on Tuesday, 1/22 could be used as the example.*

Exercise (2.6.4)**.** *Review the identities in Exercise 1.2.5.*

Exercise (2.6.5)**.** *(a) Use the triangle inequality (b) Add and subtract $x_n y_m$ within the absolute value expression.*

Exercise (2.6.6)**.** *(a) Start with an interval $[a_i, b_i]$ where b_i is an upper bound for the set, and a_i is not an upper bound. (b) Let $I_n = [a_n, b_n]$ and apply the MCT to the sequences (a_n) and (b_n). (c) As in (b) start with a set of nested intervals. This time argue the sequences (a_n) and (b_n) are bounded, so that the Bolzano-Weirstrass theorem applies. (d) Use an argument similar to the proof of the Bolzano-Weierstrass theorem, but instead of the NIP, use the fact that the intervals are nested and shrinking to width 0 together with the Cauchy Criterion to establish convergence.*