Due: Wednesday, September 13

1. Exercise 1.5.J in the text.
2. Consider $(x_1, x_2, \ldots)$ and $(y_1, y_2, \ldots)$. Show that the new sequence $(x_1, y_1, x_2, y_2, x_3, \ldots)$ converges to a number $L$ if and only if the two original sequences both converge to $L$.
3. Exercise 2.3.G in the text.
4. Exercise 2.4.F in the text.

   For your reference, the Binomial Theorem is stated in Exercises 1.5.D and 1.5.I; you can use it without proving it.
5. Exercise 2.4.J in the text. Perhaps I should also point out that the set $S$ in the exercise is closed under addition, subtraction, and multiplication by integers.