1. Exercise 5.4

2. Exercise 5.7 (final tableau = optimal basis found by the simplex method)

3. Exercise 5.8 (allowable increase and allowable decrease values indicate by how much the coefficient in question can change for the currently optimal basis to remain optimal, assuming all the other data remains fixed). In part (d), discuss whether you think the optimal profit is going to decrease and why — we did not discuss sufficient material for you to provide a bound on the amount of decrease.

4. Exercise 6.9 (although this exercise appears in chapter 6, our in-class discussion and general knowledge should be sufficient for you to answer this question). In part (b), we want meaningful (i.e., not infinite) upper and lower bounds.

5. Exercise 7.1 (we discussed a formulation for this problem earlier in the term — now you need to describe a directed graph, and a network on this graph, such that the corresponding NFP — either uncapacitated, or with upper/lower bounds, is a model for the caterer’s problem). The extra node alluded to in the textbook hint is a source of new napkins, as well as a “sink” for the remaining napkins; thus the net flow through this node should be 0.