

**MA 421 Fall 2024 (Aaron N. K. Yip)**  
**Homework 11, due on Tuesday, Nov 26th, in class**

1. Consider [V, p.234, Figure 14.6]. Repeat the primal network simplex method for this problem (as in the textbook). For each iteration, tabulate the primal, dual and dual slack variables, and the primal and dual objective functional values.
2. Consider [V, p.243, Figure 14.13]. Repeat the dual network simplex method for this problem (as in the textbook). For each iteration, tabulate the primal, dual and dual slack variables, and the primal and dual objective functional values.
3. [V] p.252, Exercises: 14.12. (This is the “only if” part of [V, Theorem 14.1].)
4. [V] p.268, Exercises: 15.1, 15.2. (For 15.2, convert it to a network flow problem and draw also the network diagram.)

Note that transportation problem is a special case of general network flow (transshipment) problem. [V, p.258] outlines an easier tabulation method (even though the complexity of transportation problem is usually not lower.)

5. [V] p.268, Exercises: 15.4, 15.6(a,c), 15.7, 15.8.