Last name	

First name _____

LARSON—OPER 731—CLASSROOM WORKSHEET 15 Complementary Slackness!

Concepts

- (Sec. 2.4) basis, basic variable, nonbasic variable, basic solution, basic feasible solution, canonical form.
- (Sec. 2.8) hyperplane, halfspace, line, line segment, convex, polyhedron, tight inequality, extreme point.
- (Sec. 3.1) dual LP, Weak duality theorem.
- (Sec. 4.3) complementary slackness
- 1. What is an example of a minimum cost perfect matching problem?

2. Given a dual feasible y, what is the *reduced cost* of an edge?

3. How can we use reduced costs and the Strong Duality Theorem to find an optimal solution?

4. What is a vertex packing (independent set) in a graph?

5. How can we model finding a maximum vertex packing in a graph with an IP (What is the *vertex packing IP*?)

6. What is complementary slackness? What is the Complementary Slackness Theorem?