Practice problems (don't turn in):

1. [DPV] Problem 7.1 and:
   Can you use the dual LP to prove it's optimal?
2. [DPV] Problem 7.4 (LP for Duff beer)
3. [DPV] Problem 7.5 (LP for canine products)
4. [DPV] Problem 7.6: Give an example of an LP with unbounded feasible region but bounded optimum.
5. [DPV] Problem 7.11 (dual to the example)
6. [DPV] Problem 7.12 (prove that point (1.5,.5,0) is optimal

Problem 1 Max-flow variants

[DPV] Problem 7.18 parts c and d (max-flow variants using LP)

Note: For (d), assume you are trying to maximize flow into t, so as to capture the advantage of paths that avoid particularly lossy nodes or that visit fewer nodes (and thus incur fewer losses). [Think to yourself about why this clarification is necessary].

Problem 2 Best fit line

[DPV] Problem 7.8 (best fit line)

You may notice something odd about the solution to this LP. If you're interested, check out @1053.

By the way, do you know how to convert this LP into standard/canonical form? You don't need to do it for the HW submission but you should know how to do it in any case.

Solution:

Problem 3 Infeasible

For an infeasible LP, the dual LP is always feasible:

TRUE or FALSE

If TRUE explain why it's true, and if FALSE give a counterexample.