Week 6 Homework

Submit your homework as a MS Word or PDF document this week. Solve the 4 problems below. In each case cut and paste the model and results into this document.

1. Problem 1 (7 pts) – use CP in OPL to solve textbook problem 12.9-2. This is very similar to one of the examples in the presentation this week. Paste your model and results here:
2. Problem 2 (8 pts) – use CP in OPL to solve textbook problem 12.9-5. You’ll need to create a “dummy” race as a place to assign the fifth swimmer. Paste your model and results here:
3. Problem 3 (7 pts) – solve the Traveling Salesman Problem using CP as discussed in the presentation and in problem 12-9.8. Write a CP program in OPL to solve the TSP introduced on page 621 of your book. You can start with the file tsp\_cp\_skeleton.mod in the download packet. The model file includes the cost matrix associated with the graph in figure 14.4. Note that we are using a very large value of $M$ as the cost between cities which are not connected to prevent the solution from using those connections. Paste your model and results here:
4. Problem 4 (8 pts) – use CP in OPL to solve the Reliable Construction Company construction scheduling problem described in the supplemental textbook section 22.1 (in download packet). You’ll want to study the example sched\_intro.mod that is included with OPL (File -> New -> Example …) which is also in the download packet for convenience (we deleted some stuff in the version in the download packet for simplicity). Paste your model and results here: