DM833 – Week 18

Exercises for Monday, April 28

1. Let G be a complete undirected graph with nonnegative edge weights. Consider the following transformation:

   Let W be the maximum weight in G.
   For each edge e, add W to the weight of e.
   Call the resulting weighted graph G'.

   On Tuesday, April 22, we proved that the weights in G' are metric.

   - Argue that a TSP tour in G is optimal, iff the corresponding tour in G' is optimal for G'.
   - Does this contradict Theorem 3.6?
   - What about using the metric closure of G instead of G' (as we did for the Steiner tree problem)?

2. Describe an algorithm for finding an Euler tour in a graph where all vertices have even degree.

3. Exercise 3.3