# Approximating Travelling Salesman Problem

TSP: Given a graph with edge weights visit every vertex (and return home) exactly once using smallest total weight.

## Christofides Algorithm for TSP 1976

1. Find T=minimum spanning tree of G
2. Compute minimum length complete (perfect) matching M in the complete graph on odd-degree vertices of T.
3. Find Euler tour E in $T \cup M$.
4. Eliminate repeated vertices from E to get TSP tour R.

A TSP tour minus any edge is a spanning tree.