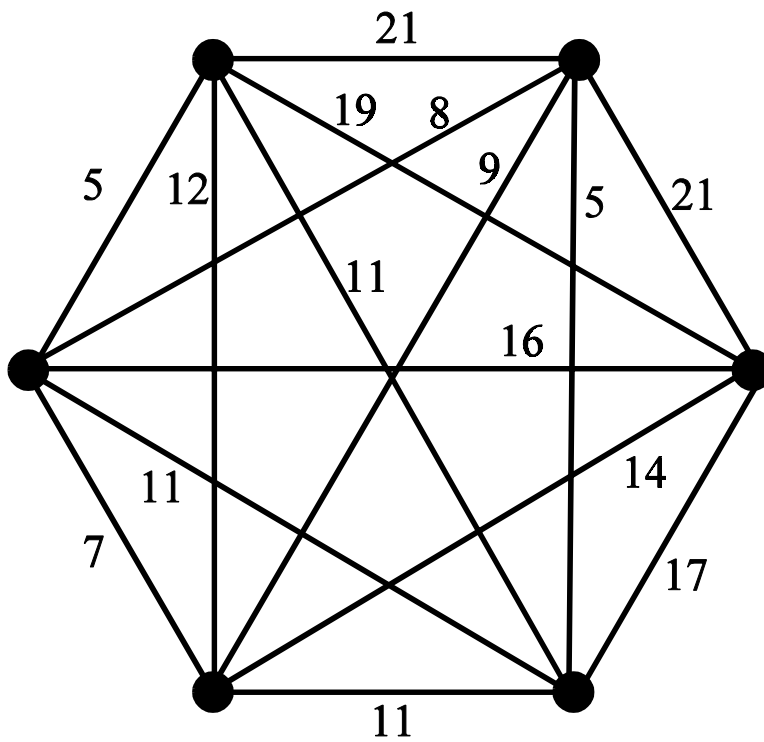
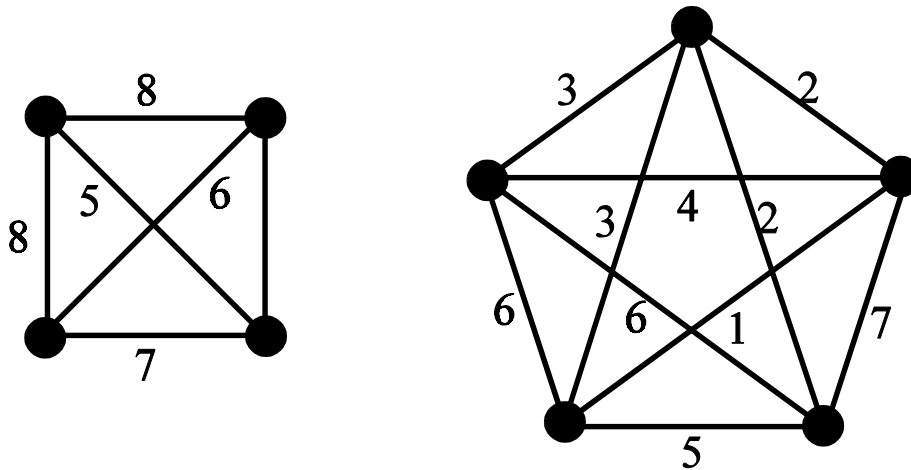


# The Traveling Salesman Problem

To find the minimum weight Hamilton circuit in a complete graph with weighted edges.





# Heuristics for TSP

## Nearest Neighbor

- Start at a vertex
- At each step, go to the nearest vertex which has not yet been visited
- When all vertices have been visited, return to the start vertex

## Repeated Nearest Neighbor

- Do the nearest neighbor algorithm, but pick many different starting vertices

## Cheapest Link

- Pick the edge of lowest weight to start with
- At each step, pick the lowest available edge, such that
  - a. you do not create a premature cycle
  - b. you do not create a vertex of degree greater than 2
- Close the cycle when it contains all vertices