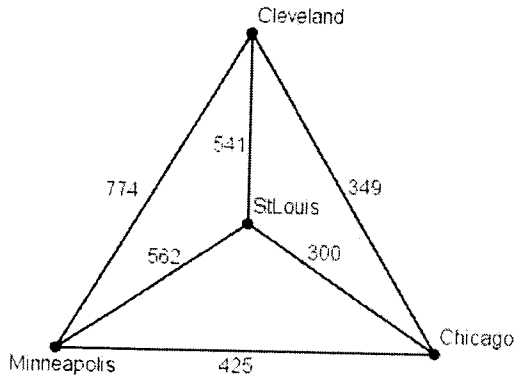


Worksheet #7 Graph Theory Applications--TSP and SPA Problems

1. Apply the Brute Force Method and the Nearest-Neighbor Method to each problem:

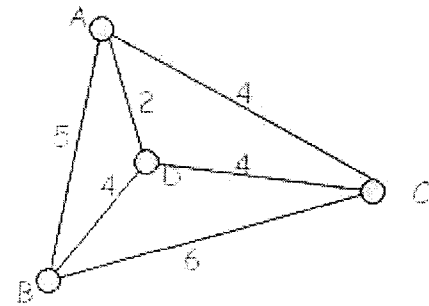
A. start at St. Louis



BF: S C I Ch MS = 1877
 S M Ch C I S = 1877

NN: S Ch C I M S = 1985

B. start at A

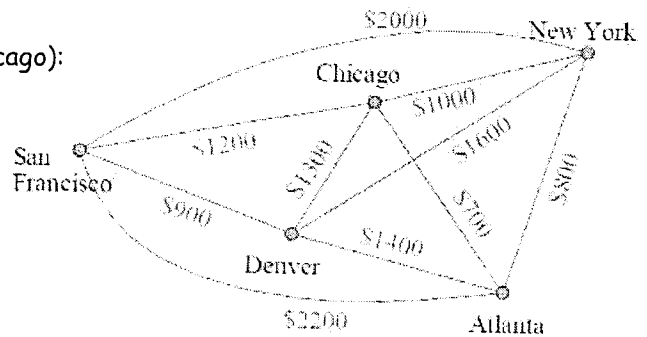


BF: A C B D A = 16
 A D B C A = 16

NN: A D B C A = 16

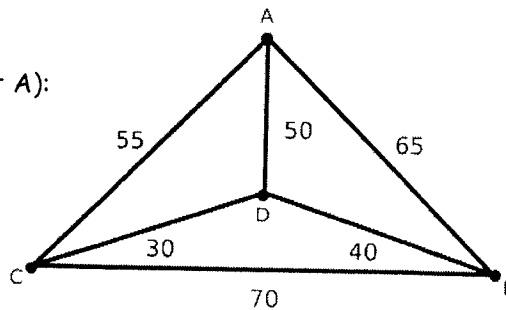
2. Apply the Nearest-Neighbor Method (start in Chicago):

C A N D S C = 5200

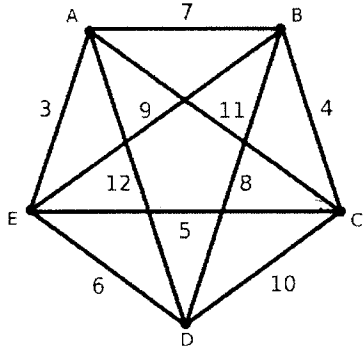


3. Apply the Brute-Force Method (start at A):

A B D C A = 190
 A C D B A = 190



4. Starting at A, find the minimum Hamiltonian circuit using the Nearest-Neighbor method:

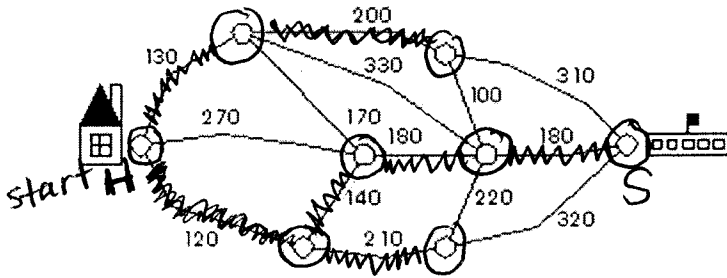


$AECBDA = 32$

5. Apply the Shortest Path Algorithm to each problem.

A. travel from home to school

$120 + 140 + 180 + 180 = 620$



B. start at vertex F

