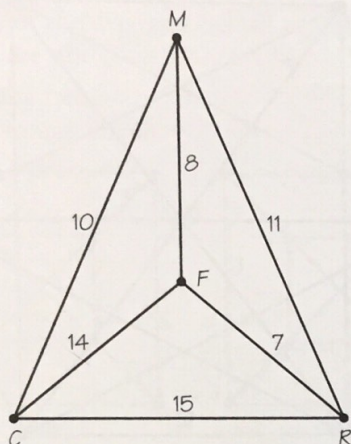


(f) If one applies the sorted-edges method, what circuit would be obtained? Does one get the optimal answer?

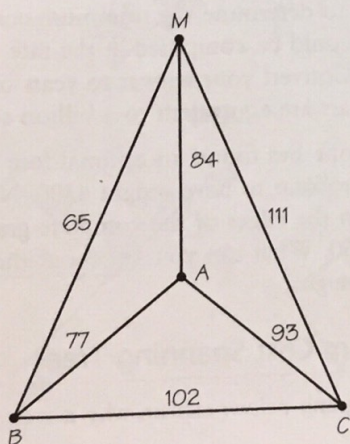
38. After a party at her house, Francine (F) has agreed to drive Mary (M), Rachel (R), and Constance (C) home. If the times (in minutes) to drive between her friends' homes are shown below, what route gets Francine back home the quickest?



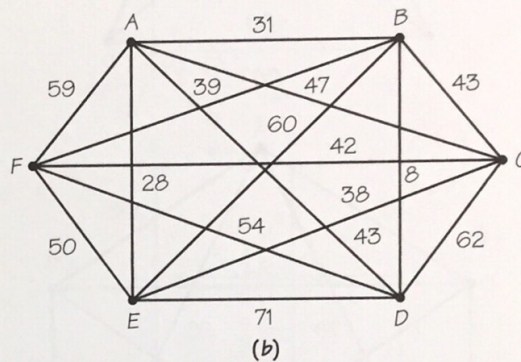
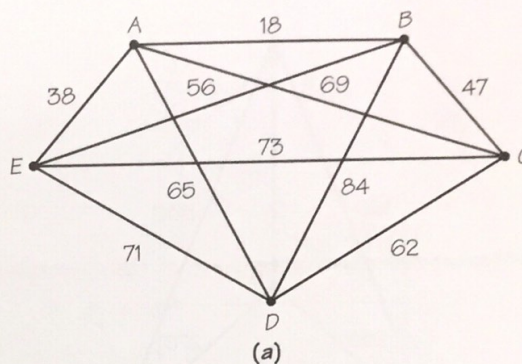
39. In Exercise 38, what route would Francine have to follow to get home as quickly as possible, assuming she promised to drive Mary home first?

40. In Exercise 38, Francine is planning to deliver her friends home and then spend the night at Rachel's house. What would her fastest route be?

41. Starting from the location where she moors her boat (M), a fisherwoman wishes to visit three areas— A , B , and C —where she has set fishing nets. If the times (in minutes) between the locales are given in the figure below, what route to visit the three sites and return to the mooring place would be optimal?



42. (a) For the two complete graphs that follow, find the costs of the nearest-neighbor tour starting at B and of the tour generated by the sorted-edges algorithm.



■ (b) How many Hamiltonian circuits would have to be examined to find a shortest route for part (a) by the brute force method?

(c) Invent an algorithm different from the sorted-edges and nearest-neighbor algorithms that is easy to apply for finding TSP solutions.

43. An airport limo must take its five passengers from the airport to different downtown hotels. Is this a traveling salesman problem, a Chinese postman problem, or an Euler circuit problem?

44. For each of the following graphs with weights, apply the nearest-neighbor method (starting at vertex A) and the sorted-edges method to find (it is hoped) a cheap tour.

