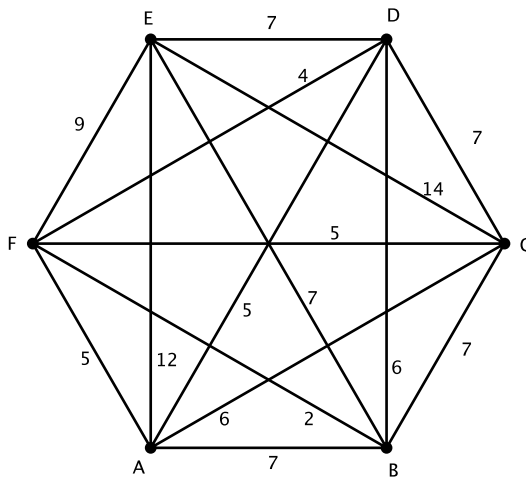


MA111 – Homework #3 Short Solutions

Chapter 6

2. (a) A,F,E,D,C,H,I,J,G,B,A; A,E,F,I,J,G,H,D,C,B,A; A,F,E,I,H,D,C,B,G,J,A. But there are more.
 (b) A,F,E,D,C,H,I,J,G,B. But there are more.
 (c) F,J,A,B,G,H,C,D,E,I. But there are more.
4. (a) A,B,C,D,E,A and its mirror image.
 (b) A,B,C,D,E,A; A,B,C,E,D,A; and their mirror images.
10. There is no Hamilton circuit since two vertices have only one edge touching them. One Hamilton path is F,B,A,E,C,D,G.
30. (a) A,B,C,D,A. Cost=155. You must list and check all six!
 (b) A,B,D,C,A. Cost=190.
 (c) C,B,D,A,C. Cost=165.
 (d) D,B,C,A,D. Cost=165.
32. (a) A,E,B,C,D,A. Time=113 minutes.
 (b) D,A,E,B,C,D. Rewriting starting at A: A,E,B,C,D,A. Time=113 minutes.
 (c) A,E,B,C,D,A. Time=113 minutes. There are six possibilities (considering the ordering of the 2nd, 3rd, and 4th cities) that you must list and check!
36. (a) N,L,S,P,B,D,H,N. Length=4340 miles.
 (b) S,L,N,P,B,D,H,S. Rewriting starting at N: N,P,B,D,H,S,L,N. Length=4315 miles.

54a.



63. The 2 by 2 grid graph cannot have a Hamilton circuit because each of the four corner vertices as well as the interior vertex *I* must be preceded and followed by a boundary vertex. But there are only four boundary vertices—not enough to go around.