

Homework 34, Section 7.1: 2, 3, 6(c,d), 9, 10, 20

Alex Gordon

November 22, 2013

Homework

2. A)

10 nodes total.

2. B)

$d(1) = 1, d(2) = 2, d(3) = 3, d(4) = 5, d(5) = 3, d(6) = 3, d(7) = 3, d(8) = 3, d(9) = 4, d(10) = 3$

2. C)

30 degrees total

2. D)

15 edges total.

3. A)

8 nodes total.

3. B)

12 edges total.

3. C)

$d(a) = 1, d(b) = 2, d(c) = 4, d(d) = 5, d(e) = 3, d(f) = 3, d(g) = 3, d(h) = 3$

3. D)

6. C)

9,3,2,4

6. D)

1,2,3,9

9. A)

3,4,8,2,6,4,5,6,7,8,1,2,3,7 is a Eulerian trail

9. B)

This graph has no Eulerian Circuit because there are four vertices of odd degree.

9. C)

1, 2, 3, 4, 5, 1, 6, 2, 7, 3, 8, 4, 9, 5, 10, 6, 7, 8, 9, 10, 1 is a Eulerian circuit

9. D)

1, 2, 4, 6, 8, 10, 9, 7, 5, 3, 1, 5, 2, 6, 10, 5, 9, 6, 1 is a Eulerian circuit

10.

There is no Eulerian trail because there are six vertices of odd degree.

20.

The maximum number of edges in a simple graph is $\frac{n(n-1)}{2}$ vertices. The reason for this is because if we write all the edges, each will contain 2 of the n vertices in no order.