Graph Theory Homework

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The homework for 2/6 is from sections 2.2, 2.3 and 2.4, and the problems are 1,2,3,10,14,17; 1,2,15,17,19; and 1,2,9,13,14, respectively.

2.2 1.

2. For number 2, assume G is connected.

3.

10. The forward direction of 10 is probably the hardest part from this section.

14. For number 14, use an edge counting argument to limit your possibilities.

17. For number 17, remove one of the vertices, and ask yourself what happens to the order and size. Then repeat it for the other vertex.

2.3 The reverse direction of number 15 is probably the hardest part of this section.

For number 17, the number of edges of a complete graph is n(n-1)/2.

2.4 For number 1, a k-partite graph is like a bipartite graph, but with k different partitions. It is complete when all vertices of each partition are adjacent to all other vertices outside its own partition.

Number 9 is tricky, but the hint in the book is a good one.