03/18/09

Math 412 HW9

Due Wednesday, April 1, 2009

Solve five of the next six problems.

1. # 4.1.11 in the book.

2. Harary graphs, $H_{k,n}$, are defined in Subsection 4.1.4. Prove that when k is even, the k-connected Harary graph $H_{k,n}$ has no edge whose contraction produces a k-connected graph. (Hint: Every edge lies in a triangle.)

3. # 4.1.18 in the book.

4. # 4.1.26 in the book.

5. # 4.1.34 (a) and b)) in the book.

6. Let u and v be nonadjacent vertices in a 2-connected graph G. Prove that if $G - u - v$ is connected, then v lies on a cycle in $G - u$.

Problems below review basic concepts and their ideas could be used in the tests.

WARMUP PROBLEMS: Section 4.1: # 1, 2, 3, 5, 30. Do not write these up!
OTHER INTERESTING PROBLEMS: Section 4.1: # 8, 10, 17, 24, 31. Do not write these up!