

HOMEWORK 3

Due Friday, October 2, 2009 at the beginning of class

For general homework policies and our suggestions, please see the policy document.

Take a look at Jeff's grading rubric before you write your solutions.

No collaboration is allowed on the first problem.

1. (**You must work on this problem on your own: NO collaboration is allowed**) (40 points)

A *forest* with c *components* is a graph that is the union of c disjoint trees. Note that a tree is a forest with 1 component. Prove that an n -vertex forest with c components has $n - c$ edges. (Recall that we have proved the statement above for $c = 1$ in class.)

2. (40 points) Exercise 5 in Chapter 3.
3. (10 + 10 = 20 points) Exercise 8 in Chapter 2.