MATH 634, Spring 2013
Half-Homework 5
to be turned in at 4:30pm on Monday, April 8.

Background reading: Pearls in Graph Theory, Sections 8.1 and 8.2.

Complete the following three problems. You are also expected to be progressing on your project, as described below.

5-1. (4 pts) Find and prove an "Euler's formula" for **disconnected** planar graphs.

5-2. (3 pts) 8.1.9abc [In part (c), add edges—do not subtract them.]

5-3. (3 pts) Use an argument involving girth to prove that the Petersen graph is not planar.

Bonus. Play the planarity game at http://www.planarity.net/. Complete levels 1–4 for two bonus points and complete levels 1–7 for two more (four total). If possible, email a screen capture of (or print out) the last level you completed with your score and turn it in.

Project progress. For Monday, April 8, I expect everyone to have started working on their Wikipedia project. In particular, you should have accumulated some sources that you will cite in your work, you should have a plan for working through the project, and you should have started practicing editing pages on Wikipedia in your sandbox.

Before class on Monday, email Prof. Chris a link to one (or more) sandbox pages in your Wikipedia user space that includes an outline of your project including a plan of attack for your project. This will include the following:

- The scope of your project—what main points will you be focusing on? (This requires reading texts and deciding on what is important and what is not.) Break this down using bullet-points to clarify the major topics.
- You must also include at least two references that have been published in print form, such as books or journals. The copy of the source you consult may be on the internet, but they must have appeared in print form at some point.

For help getting started using wikipedia, you should read through the following guide:

- http://en.wikipedia.org/wiki/Wikipedia:Training/For_students

I have started a sandbox that includes everyone's sandbox in our class.

- http://en.wikipedia.org/wiki/User:GraphTheoryProf/sandbox