

MATH 634, Spring 2014
HOMEWORK 12
due 5:00PM on Wednesday, March 26.

Follow the posted homework guidelines when completing this assignment.

Problems **12E**, **12A**, **12B**, and **12C**, should be typed (or written up) and handed in as class starts on Wednesday 3/26.

- 12E.** Play the planarity game at <http://www.planarity.net/>. Complete levels 1–6 for full credit or levels 1–4 for 3 points out of five. Complete level 7 for two bonus points. If possible, email a screen capture of (or print out) the last level you completed with your score and turn it in.
- 12A.** Use an argument involving girth to prove that the Petersen graph is not planar.
- 12B.** 8.1.9abc [In part (c), add edges—do not subtract them.]
- 12C.** (a) Find a graph G with degree sequence $(4, 4, 3, 3, 3, 3)$ such that G is planar.
(b) Find a graph H with degree sequence $(4, 4, 3, 3, 3, 3)$ such that H is non-planar.
Remember to prove that your examples satisfy the given requirements.