

**Math and Computers, Math 165**  
**Homework five**

**1. Last Programming Project Due June 1st:**

- In class I described to you two system of equations whose solutions correspond to the independent sets of a graph, to the k-colorings of a graph, and to the isomorphism problem on graphs. Write MAPLE code to run those problems for graphs of arbitrary size. Input of your code must be a graph in MAPLE format.
- Using your code count how many **automorphisms** are there in the Petersen graph (to see a picture, note it is part of MAPLE's network package). Similarly, use your code to show that the graph of a dodecahedron (again it is part of MAPLE's network package) is 3-colorable but not 2-colorable.