Notes on MHW1, Sept 26, 2016

The grading was based on problems 1.6 (a long one) and 1.9 (an optional one) and 2.5 (a short one). The overall grade was the average of the two grades on 1.6 and 2.5. If you did the optional problem, you got up to 20 points bonus added to that.

About problem 1.6: an interesting pattern occurs because the author created a *bipartite graph* in which vertices with odd indices are only adjacent to vertices with even indices. The change in part (e) gives another bipartite graph, so the pattern continues. But the change in part (f) destroys the pattern.

About problem 1.9: I do not consider magic squares to be very important, but they can be fun, and hopefully they can help improve our mental skills.

About problem 2.5: this calculation shows that a program like MATLAB, which optimistically rounds off numbers, can produce crazy answers. This can be an important issue in real life, but it is beyond the scope of this course. See chapter 8 (Numerical Linear Algebra) or maybe take a course in Numerical Methods, for ways to detect or control such errors.

I wrote a page like this about 10 years ago which (as of Sept 2016) is still posted on my MHW web page. Read it if interested.