

## Presentations Math 108, Spring 2016

In Math 108 this semester, each of you will have to do three oral presentations at the board. Two of them will be 5 minutes long, and the third will be 10 minutes long.

**5 minute presentations.** You have the choice of presenting two homework problems or one homework problem and one wikipedia entry.

*Homework problem presentations:* Here, you describe either your outline or your solution to a problem assigned on a problem set. The proof notes have a guide to presenting math in the classroom in Part V (Section 24); the most important point is to write down everything that you say in an orderly manner. Note that within reason, you will not be graded on whether your solution is correct; the point is that you explain it clearly. (However, egregious errors due to lack of preparation will be downgraded.)

*Wikipedia entry presentations:* Here, you take one of the areas of mathematics in the list below and, using the wikipedia entry (or other source) on the topic, (a) give a very brief description of what that subject is and (b) describe, as precisely as you can in the given time, one typical problem in the subject. Topics are listed with their corresponding math classes. Proof-heavy topics are at the end of the list; boldfaced topics are from the core required difficult proof classes of the undergraduate major.

vector calculus (112)	differential geometry (113)
Euclidean plane isometries (115)	number theory (126)
linear algebra (129A)	differential equations (133A)
partial differential equations (133B)	dynamical systems (134)
complex variables (138)	combinatorics (142)
numerical analysis (143C)	numerical linear algebra (143M)
statistics (161A)	regression (161B)
bioinformatics (162)	probability (164)
linear programming (177)	non-linear optimization (177)
mathematical modeling (178)	graph theory (179)

<b>vector spaces</b> (129B)	<b>group theory</b> (128A)
<b>ring theory</b> (128A–B)	field theory (128B)
<b>continuous functions</b> (131A)	<b>differentiable functions</b> (131A–B)
Riemann integral (131B)	point-set topology (175)
mathematical logic (171)	

In case a wikipedia presentation looks easier to you than presenting a homework problem, be warned, it is actually quite difficult, especially given only 5 minutes. However, it will be worthwhile for you to find out what the courses ahead are all about.

**10 minute projects.** In the last few weeks of the semester, each of you will lecture on a piece of “Section One” of some upper-level course. More details will be given when the time comes, but for an idea of what you will be talking about, see Part VI of the proof notes.

**Grading.** Your first two presentations will be graded on a scale of 0 to 10, and the higher of the two scores becomes part of your homework average. Your third presentation will be graded on a scale of 0 to 20, and becomes part of your homework average.