Math 409, Spring 2013
Midterm Exam Information

The midterm exam will be on **Thursday, March 14** (Pi Day), in class.

Things to Know

You should understand the definitions, axioms, and theorems from the list on the website. You don't need to memorize these facts word-for-word, or remember their numbers in the axiom list, but you should understand each one.

You should be able to write a proof in which each statement you make follows from the preceding ones, and/or from specific definitions, axioms, and theorems.

What to Bring

Pen or pencil, straightedge, and compass. I'll try to have spares but I can't guarantee it. You won't need a calculator.

I will provide the same short list of axioms and theorems that is available on the website.

What to Expect

Here are the kinds of problems I'll ask you:

- Carry out a construction with ruler and straightedge, and explain why it works.
- Prove a geometric theorem, including a justification for each step. (For instance: Prove that the angles of a triangle add up to 180°. Prove that every parallelogram inscribed in a circle is actually a rectangle.)
- Fill in the missing steps or justifications from a proof that you're given.
- Explain why some Euclidean construction works. (Examples: EG #14, 19, 26.)

Study Suggestions

- Go over previous EG homework problems you've handed in. Read the comments and try to fix any mistakes of geometry of logic. Think about other ways to solve the problem. Try to come up with related problems or theorems.
- Look at the proofs of theorems in the notes on the website. Try to predict each step of the proof before you read it. Be sure you understand how axioms and previous theorems are being applied to justify each step.
- Solve the EG problems that weren't assigned as homework problems. You can show me your solutions during office hours and ask me if they're correct.
- Don't study each definitions, axiom, or theorem in isolation. Instead, ask yourself things like: what do we know implies that two triangles are congruent? Are similar? What implies that two lines are parallel? If two lines are parallel, what do we know? Et cetera.