

One of the goals of this class is to introduce you to the world of active mathematical research. To that end, you will write a short paper on an unsolved problem in mathematics. In the lab this week, you will have the opportunity to identify possible topics and resources for your paper.

After you have completed the lab activity, you may select an unsolved problem to write about. There are many, many unsolved problems that mathematicians are working on today; for the purposes of your paper, select a problem that is accessible to you (i.e. make sure you understand the *statement* of the problem, even if you do not understand the methods that are currently being applied to the problem).

In your paper,

1. State the problem in terms that another student in this class can understand.
2. Give some historical context for the problem, e.g. a) who posed the problem, b) in what area of mathematics the problem arose, c) who has worked on this problem, d) who (if any) are the current mathematicians working on the problem, d) what related discoveries were made while someone was working on the problem, e) why the problem is important.

Formatting, etc.

1. The paper should be 3-4 pages, typed, with line spacing of 1.5.
2. Use *Mathematica* to typeset mathematical expressions.
3. At least three references should be included. References need to be credible sources. Internet resources may be used.
4. Of course it goes without saying that words you use should be your own.

Timeline:

- Jan 12: Gathering resources (in lab)
- Jan 19: Paper proposal due (one paragraph summary of your topic and a list of references)
- Jan 19: Practice mathematical typesetting with *Mathematica* (in lab)
- Jan 26: First draft due
- Feb 16: Final draft due