Math 130 Homework 5

Reading:

- Reading from J. Ellenberg's *How not to be wrong*, posted on the website.
- Stillwell, chapter 5. We'll cover the beginning on Thursday, Oct. 8, and the rest of it next week.

1. (not to hand in) Think about your independent project! Do enough research to help you choose a topic.

2. Using the axioms P1-P4 for projective geometry (from Hartshorne), prove that every point is contained in (at least) 3 different lines.

3. Summarize Ellenberg's argument of how the Fano plane helps you buy lottery tickets (assuming your lottery has 7 numbers, that is)

4. Explain how to produce a perspective drawing of a floor tiled with regular hexagons, using straightedge alone. (See problems 5.2.1 and 5.2.2 in S4P).