

As I had hoped, we will split the exam into a closed-book, “statement” portion on Wednesday (half of class period), and a second, POSSIBLY open-book, “proof” portion on Friday (whole class period).

For Wednesday, be able to give mathematically precise statements of:

1. the three unnamed Betweenness Axioms
2. the Plane Separation Axiom (Betweenness Axiom #4)
3. the definitions of \overline{AB} , \overrightarrow{AB} , and same/opposite side(s) of a line
4. the Line Separation Property
5. Pasch’s Theorem and ~~the Crossbar Theorem~~

For Friday, be prepared to prove portions of results about betweenness or short “new” results, using ideas up to and including Proposition 3.6 in the text.

1. These will not be verbatim directly from your notes on in-class results.
2. They will be shorter proofs, similar to the most recent homework.
3. I envision giving you a SET of hypotheses that either have ALREADY occurred together in our previous work, or COULD easily occur in similar results and asking you to prove some small claim.
4. For example, in the text’s proof of the Line Separation Property, we reach a stage where we are assuming
 - (a) $C * A * B$
 - (b) $P * A * B$
 - (c) and $P \neq C$

I could then ask you “Show that $C * A * P$ is impossible.” However, I would use different letters for the points, so that the proof is not copied directly from your text.

5. A good way to study for this portion of the exam is to practice the previous proofs, in class and homework, ESPECIALLY at those places where a set of cases is created or discussed.
6. You could also create practice problems for yourself or a partner.
7. If you would like to practice the problem above and get my feedback, that’s fine too.