

This is a partial study sheet for the second midterm for MAT 200, lecture 2. All topics covered in the “Course Notes on Geometry”, all topics covered in lecture, and all topics covered in homework assignments are fair game for exam questions. The following is meant as an outline of what material is essential for the exam.

*Axioms and Definitions:* The following is a list of axioms and definitions which absolutely must be memorized.

- Definition of transverse lines.
- Definition of parallel lines.
- Incidence Axiom
- Parallel Axiom
- Ruler Axiom
- Definition of points being “between” each other on a line.
- Definition of line segment.
- Definition of “same side” and “opposite sides” of a line.
- Definition of ray.
- Plane Separation Axiom
- Definition of angle.
- Definition of straight angle, and interior of a non-straight angle.
- Protractor Axiom
- Definition of vertical and supplementary angles.
- Definition of congruent triangles.
- Side-Angle-Side Congruence Axiom
- Definition of isosceles triangle.
- Definition of perpendicular or orthogonal lines.
- Definition of alternate interior angles.
- Definitions of quadrilateral, convex quadrilateral, parallelogram, rectangle, and square.
- Definition of similar triangles.

*Theorems, Lemmas, Corollaries, and Exercises, part I:* In the following list, the statement of each theorem, lemma, corollary, or exercise must be understood, and each student must know how to implement them.

- Exercise 3.5
- Exercise 3.6
- Theorem 3.2 (remember there’s a typo in this one)
- Exercise 4.2
- Theorem 4.2
- Theorem 5.1
- Theorem 5.3
- Theorem 5.4
- Theorem 5.6
- Theorem 5.9

- Theorem 6.2
- Lemma 6.6 (remember there's a typo in this one)
- Theorem 7.1
- Theorem 7.5
- Theorem 7.6
- Theorem 7.7

*Theorems, Lemmas, Corollaries, and Exercises, part II:* In the following list, the statement of each theorem, lemma, corollary, or exercise must be understood, and each student must know how to implement them. You are also expected to be able to prove each item, as well.

- Theorem 2.1
- Theroem 2.2
- Exercise 2.6
- Exercise 3.1
- Theorem 3.5
- Theorem 4.4
- Theorem 6.5
- Theorem 6.7
- Theorem 6.9

An item not appearing in one of the previous lists does not imply that it can simply be “forgotten about”. However, any theorem, lemma, corollary, etc. required to solve a question on the exam, and not appearing in one of these lists will be supplied during the exam.