MAT 360

Homework 6

This homework has a substantial reading component. Please read sections 17–19, 103, **104**, 105–111, **112, 113**, 114, 121, 122, **123, 124, 126, 129**, 135, **136**. Some of these were not covered in class as the class discussions took slightly different route; the readings will complement and augment the lectures. Please pay special attention to sections listed in bold, especially if you missed the class on Thursday.

Please do questions **245, 247, 273, 274** and the additional questions below. To solve 274, connect the endpoints of diameters with the intersection point of the circles and show that it is a straight line.

Problem 1. For a given segment AB, find the geometric locus of points C such that $\angle ACB = 90°$. Prove your answer. Use material from sections 123, 126.

Problem 2. Suppose the parallelogram $ABCD$ can be inscribed into a circle. Then this is a special kind of parallelogram. Which one? Prove your answer.