MTG 3203
Homework 3
September 9, 2009
Due September 16

In Geometer's Sketchpad, we have the "Construction" menu that gives us the ability to do some common construction tasks in one step. Specifically, we are talking about:

1) Given a line segment, find its midpoint.

2) Given an angle, find the line that bisects it.

3) Given a point and a line (or segment or ray), draw a line through the point that is perpendicular to the line.

4) Given a point and a line (or segment or ray), draw a line through the point that is parallel to the line.

5) Given a point and a line segment, draw a circle centered at the point and whose radius is the length of the segment.

We have performed constructions #1 and #2 in class, and we proved these constructions were correct. But to use #3 through #5, we need to show these constructions can be done with a straightedge and compass. In terms of Geometer's Sketchpad, this means we need to show that we can do the constructions #3 through #5 using only the four buttons on the lefthand side of the screen. So...

1) Download "hw3.gsp" from the web site. In the file, you will be asked to perform three constructions, corresponding to #3 through #5 above. Perform these constructions using *only* the buttons on the lefthand side of Sketchpad, and *without* using anything from the "Construction" menu (actually, I'll allow you to use the "Perpendicular line" and "Parallel line" commands for #5). Numbers 3 and 4 should be fairly striaghtforward, but #5 will take some effort.

2) Precisely write down the steps to the three constructions from part 1. Follow the models from class. I am *not* asking you to prove the constructions work.