Math 130

Homework 1 – Due September 6, 2016
Jamie Conway

1. Play several levels of *Euclid: the game* at `http://www.euclidthegame.com/` (nothing to hand in).

2. Do the following problems from Stillwell's *The Four Pillars of Geometry*:

   > 1.3.5, 1.3.6, 1.4.1, 1.4.2, 1.4.3, and 1.4.4.

3. Construct the following with straightedge and compass. You need to explain the *construction* and also *justify* why your construction does what you claim it does. For the justification, you can use middle school geometry facts (*eg.* similar/congruent triangle theorems) that we have yet to prove, as long as you state what you use.

   (a) Given a circle with centre O and a point A outside the circle, construct a tangent line to the circle passing through A.

   (b) Given a triangle, construct a circumscribed circle (*ie.* one that passes through the vertices of the triangle).