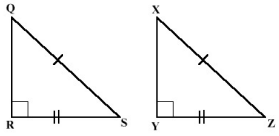
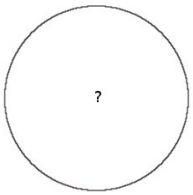
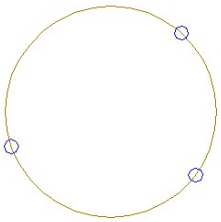
UW Math Circle - Homework 5



1. Prove that if the hypotenuse and a leg of one triangle are congruent to the hypotenuse and a leg of another triangle, then the triangles are congruent. You may use the SAA, ASA, AAS, SAS, and SSS rules of congruency in your proof, along with any other well-known facts.

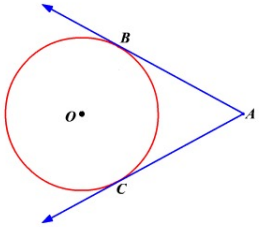
2. You are given a circle, but the center has been erased. Construct the center of the circle using a compass and straight edge.





3. Given three points, use a compass and straight edge to construct a circle that passes through all three points.

4. *Challenge:* Given a circle centered at O and a point A outside the circle, use a compass and straight edge to construct two lines through A that are tangent to circle O at different points.



Hint: start by drawing just one tangent - show that A, B, and O all lie on a circle with diameter AO. After you prove this, how can you construct this circle, and from that determine point B?