Mathematics 2260H – Geometry I: Euclidean geometry
Trent University, Fall 2018
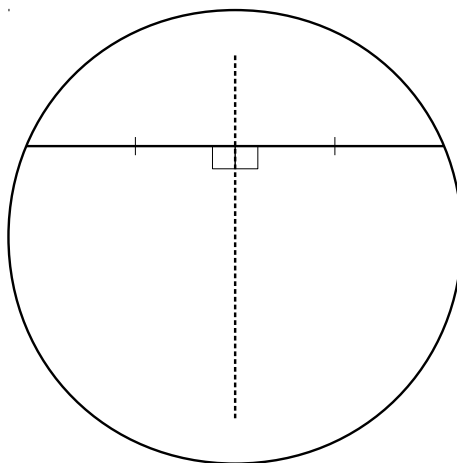**Assignment #5**
Perpendicular Bisectors
Due on Friday, 12 October.

In what follows, you may use Postulates I–V (and V'), as well as Postulates A and S, and Propositions I-1 through I-30.

1. Recall that a line segment joining two points on a circle is called a *chord* of the circle. Show that the perpendicular bisector of a chord of a circle passes through the centre of the circle. *[4]*

2. Show that the perpendicular bisectors of the sides of a triangle meet in a common point, which is the centre of a circle that passes through all three vertices of the triangle. *[6]*
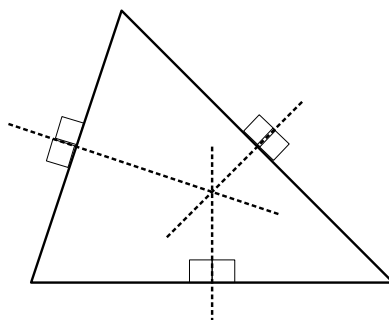
NOTE. The circle passing through all three vertices of a triangle is the *circumcircle* of the triangle, and its centre, the point where the perpendicular bisectors of the sides meet, is the *circumcentre* of the triangle, usually denoted by O.