

MATH 6: HANDOUT 14
GEOMETRY: RULER AND COMPASS CONSTRUCTIONS II

CONSTRUCTIONS WITH RULER AND COMPASS

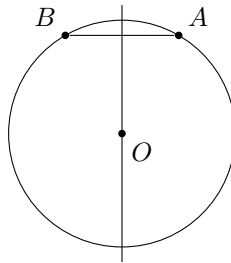
Here is a summary of operations we can do using a ruler and compass. You can freely use any of them in the problems below.

1. Construct the midpoint of a given segment AB
2. Construct the perpendicular bisector of segment AB , i.e. a line that goes through the midpoint of AB and is perpendicular to AB .
3. Given a line l and a point A on l , construct a perpendicular to l through A .
4. Given a line l and a point P outside of l , construct a perpendicular to l through P .
5. Given an angle AOB , construct the angle bisector (i.e., a ray OM such that $\angle AOM \cong \angle BOM$).

The following section explains the importance of these constructions.

PERPENDICULAR BISECTOR AND ANGLE BISECTOR

1. If two points A, B are on a circle, then the center of this circle lies on perpendicular bisector to AB (i.e., a line that goes through the midpoint of AB and is perpendicular to AB).



2. If a circle is inscribed in the angle ABC , then the center of this circle lies on the angle bisector.

