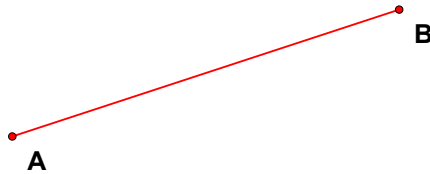**Name _____**

Construction Portfolio: Part 1

This document consists of 12 figures. Each of these figures provides the starting point for a construction using a compass and an (unmarked) straightedge.

For each figure, carry out the construction indicated. This will give you practice in some of the fundamental constructions in the course.

Then save the constructions as the first part of your Construction Portfolio. This Portfolio is considered a major assignment, and will be checked later for correctness and completeness.
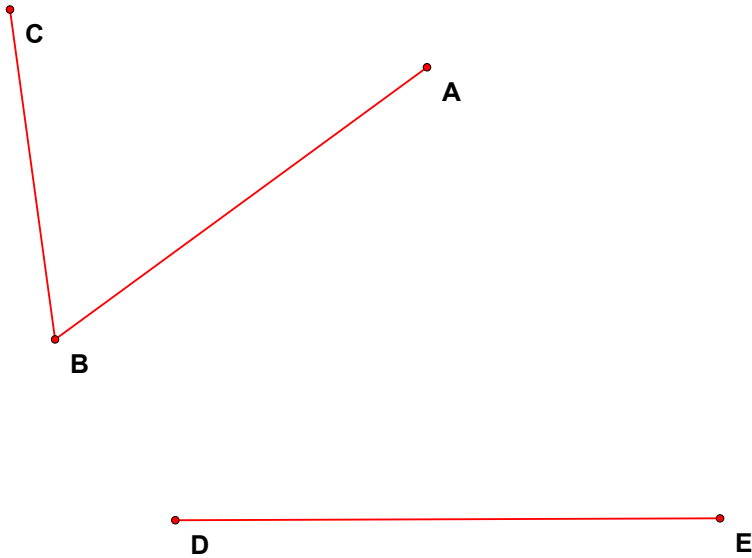
1. Equilateral triangle from a side

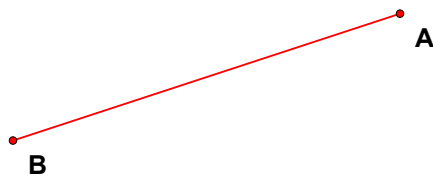**Construct a point C so that the triangle ABC is equilateral**

B

A

2. Copying an angle

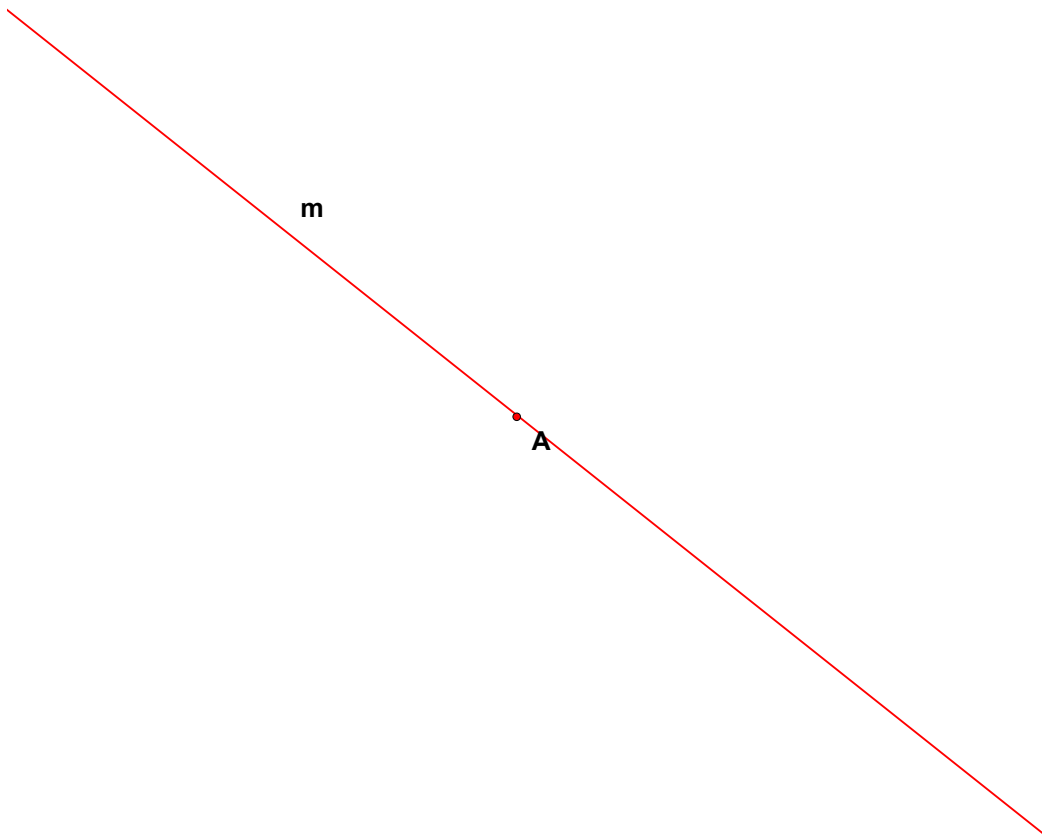Construct a point F so that angle DEF is congruent to angle ABC.

3. Perpendicular bisector of a segment

**Construct the perpendicular bisector of segment
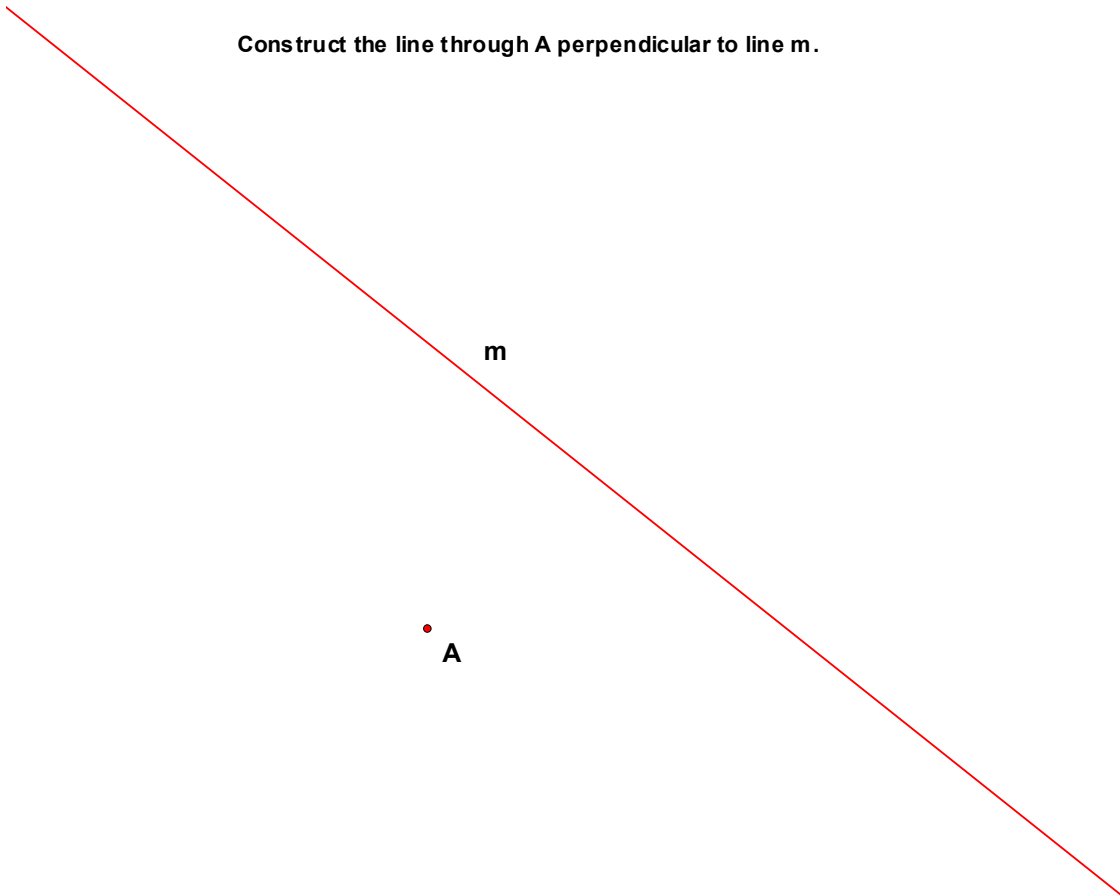AB. Also construct the midpoint M of AB.**

A

B

4. Line through a point perpendicular to a given line: point on line

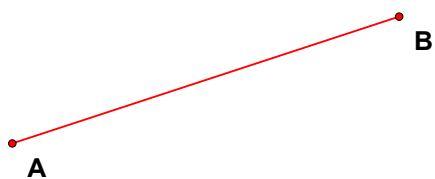**Construct the line through A perpendicular to line m.**

5. Line through a point perpendicular to a given line: point not on line

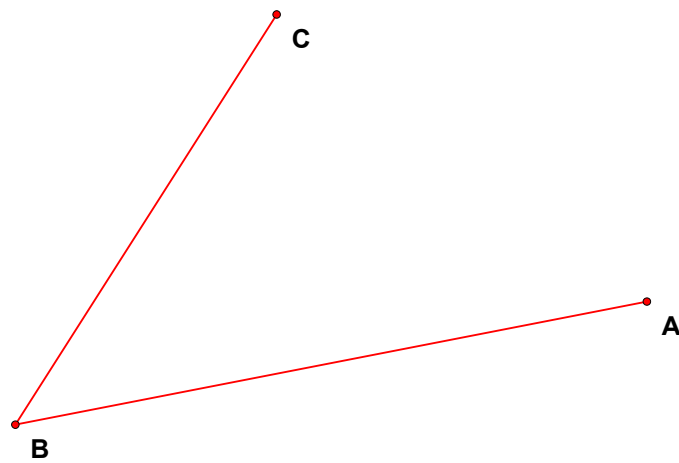**Construct the line through A perpendicular to line m.**

m

A

6. Square from a side

Construct points C and D so that the quadrilateral ABCD is a square.
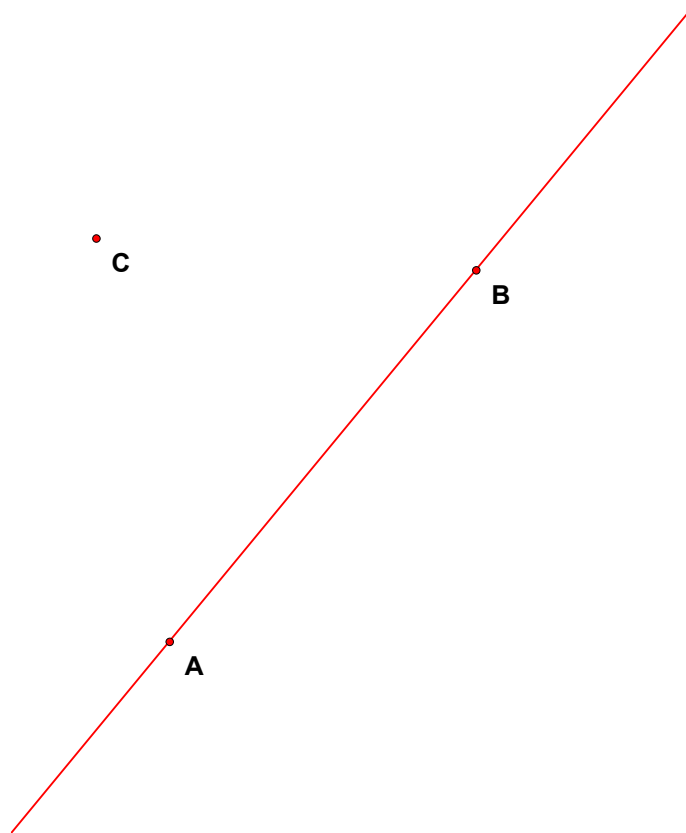
B

A

7. *Angle bisector*

Construct the bisector of angle ABC.
Also construct the bisectors of the exterior angles of ABC.
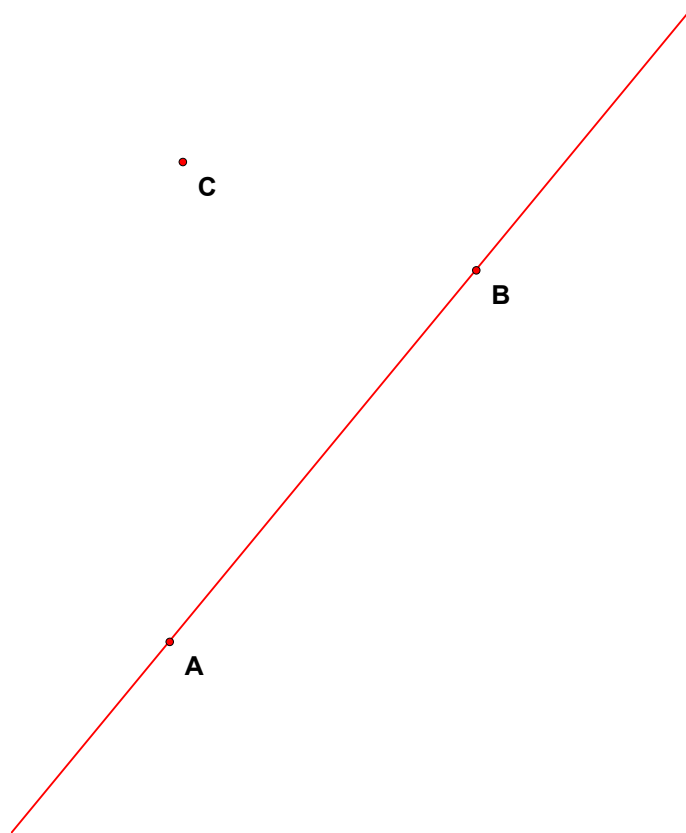
8. Parallel to line through a given point

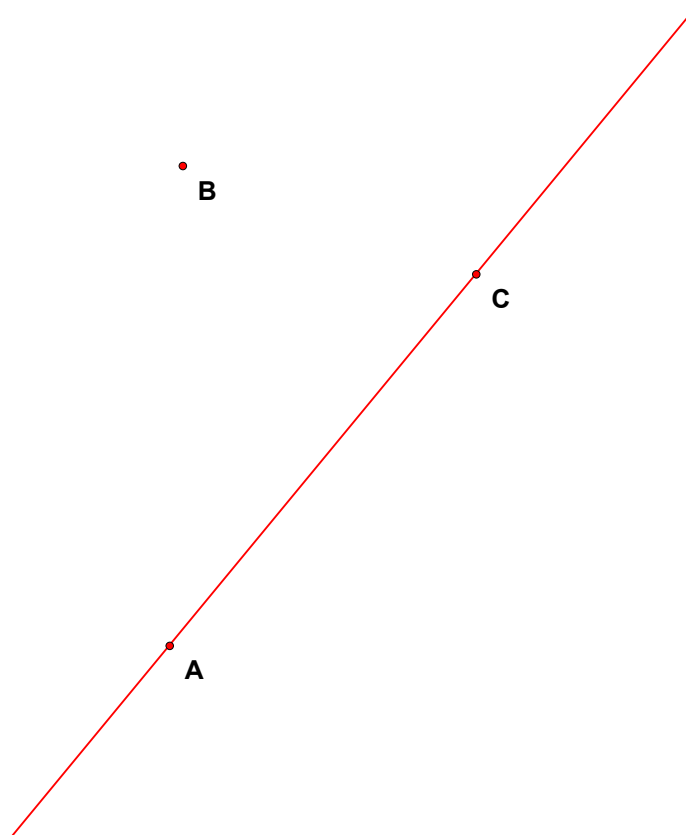**Construct a line through C parallel to line AB.**

9. Parallelogram from 3 vertices

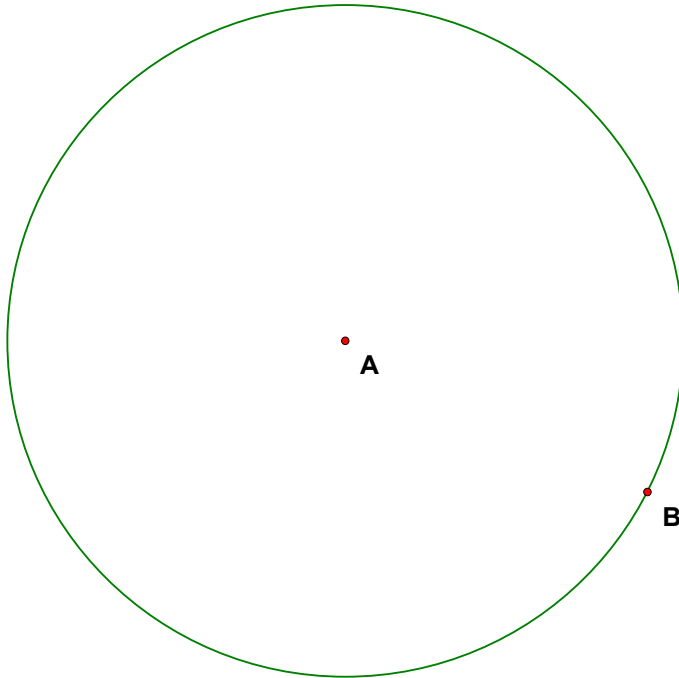**Construct a point D so that ABCD is a parallelogram.**

10.   Parallelogram from vertex and diagonal

Construct a point D so that ABCD is a parallelogram.

11.   *Tangent line to point on circle*

Construct the line through B that is tangent to the circle.

12. *Circle tangent to line, given center*

Construct the circle with center A that is tangent to line m.

A

m