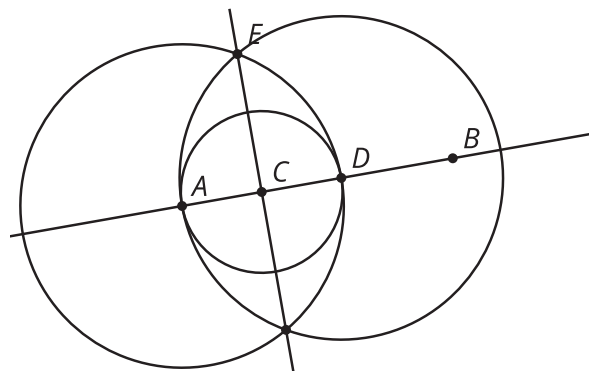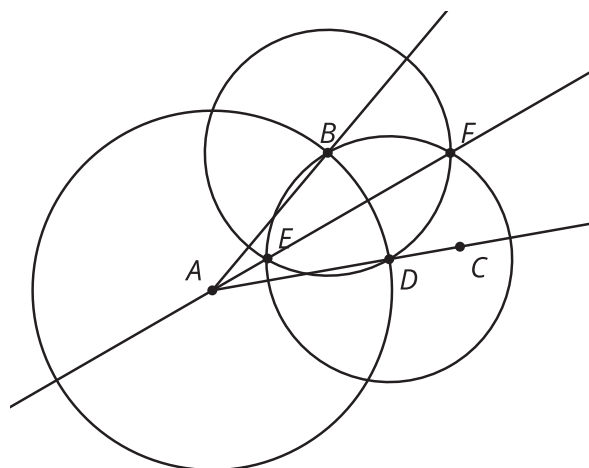# Lesson 5 Practice Problems

1. This diagram is a straightedge and compass construction of a line perpendicular to line AB passing through point C. Explain why it was helpful to construct points D and A to be the same distance from C.

2. This diagram is a straightedge and compass construction.

   Select **all** true statements.

   A. Line EF is the bisector of angle BAC.

   B. Line EF is the perpendicular bisector of segment BA.

   C. Line EF is the perpendicular bisector of segment AC.

   D. Line EF is the perpendicular bisector of segment BD.

   E. Line EF is parallel to line CD.

3. This diagram is a straightedge and compass construction. A is the center of one circle, and B is the center of the other. A *rhombus* is a quadrilateral with 4 congruent sides. Explain why quadrilateral $ACBD$ is a rhombus.
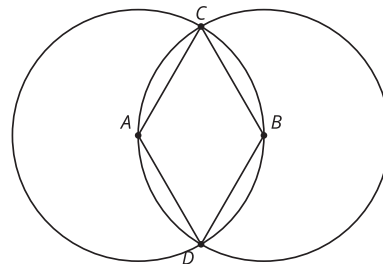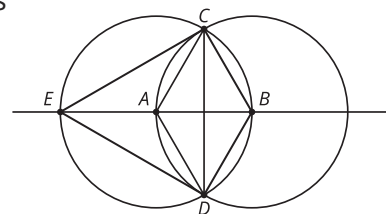
4. A, B, and C are the centers of the three circles. Which line segment is congruent to HF?

   A. AB

   B. CD

   C. DF

   D. CB
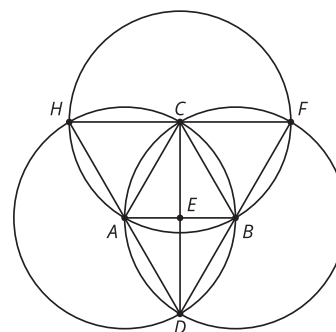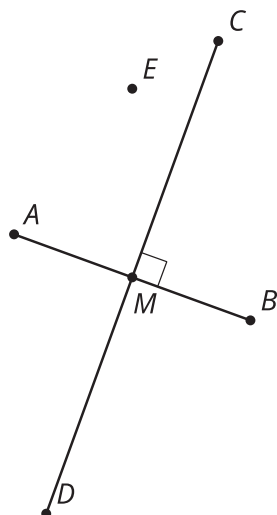
5. In the construction, A is the center of one circle, and B is the center of the other. Explain why segment EA is the same length as segment BC.

6. $AB \perp CD$

In this diagram, line segment CD is the perpendicular bisector of line segment AB. Assume the conjecture that the set of points equidistant from A and B is the perpendicular bisector of AB is true. Is point M closer to point A, closer to point B, or the same distance from both points? Explain how you know.
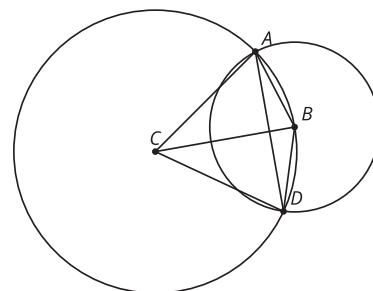
(From Unit 1, Lesson 3.)

7. A sheet of paper with points A and B is folded so that A and B match up with each other.

Explain why the crease in the sheet of paper is the perpendicular bisector of segment AB. (Assume the conjecture that the set of points equidistant from A and B is the perpendicular bisector of segment AB is true.)

(From Unit 1, Lesson 3.)

8. Here is a diagram of a straightedge and compass construction. C is the center of one circle, and B is the center of the other. Explain why the length of segment CB is the same as the length of segment CD.

(From Unit 1, Lesson 1.)