### Lesson 4 Practice Problems

1. This diagram is a straightedge and compass construction. $A$ is the center of one circle, and $B$ is the center of the other. Explain how we know triangle $ABC$ is equilateral.
* 
1. $A$, $B$, and $C$ are the centers of the 3 circles. How many equilateral triangles are there in this diagram?
* 
1. This diagram is a straightedge and compass construction. $A$ is the center of one circle, and $B$ is the center of the other. Select **all** the true statements.
* 
	1. $AC=BC$
	2. $AC=BD$
	3. $CD=AB$
	4. $ABCD$ is a square.
	5. $ABD$ is an equilateral triangle.
	6. $CD=AB+AB$
1. Line segment $CD$ is the perpendicular bisector of line segment $AB$. Is line segment $AB$ the perpendicular bisector of line segment $CD$?
* 
* (From Unit 1, Lesson 3.)
1. Here are 2 points in the plane.
* 
	1. Using only a straightedge, can you find points in the plane that are the same distance from points $A$ and $B$? Explain your reasoning.
	2. Using only a compass, can you find points in the plane that are the same distance from points $A$ and $B$? Explain your reasoning.
* (From Unit 1, Lesson 3.)
1. 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. Select **all** statements that must be true.
* $AB⊥CD$
* 
	1. $AM=BM$
	2. $CM=DM$
	3. $EA=EM$
	4. $EA<EB$
	5. $AM<AB$
	6. $AM>BM$
* (From Unit 1, Lesson 3.)
1. The diagram was constructed with straightedge and compass tools. Name **all** segments that have the same length as segment $AC$.
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* (From Unit 1, Lesson 1.)
1. Starting with 2 marked points, $A$ and $B$, precisely describe the straightedge and compass moves required to construct the quadrilateral $ACBD$ in this diagram.
* 
* (From Unit 1, Lesson 2.)
1. In the construction, $A$ is the center of one circle and $B$ is the center of the other. Which segment has the same length as $AB$?
* 
	1. $CB$
	2. $CD$
	3. $CE$
	4. $CA$
* (From Unit 1, Lesson 2.)



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