### Lesson 9 Practice Problems

1. Which construction can be used to determine whether point $C$ is closer to point $A$ or point $B$?
	1. Construct triangle $ABC$.
	2. Construct a line perpendicular to segment $AB$ through point $C$.
	3. Construct the bisector of angle $ACB$.
	4. Construct the perpendicular bisector of segment $AB$.
2. The diagram is a straightedge and compass construction. Lines $ℓ$, $m$, and $n$ are the perpendicular bisectors of the sides of triangle $ABC$. Select **all** the true statements.
* 
	1. Point $E$ is closer to point $A$ than it is to point $C$.
	2. Point $L$ is closer to point $B$ than it is to point $A$.
	3. Point $D$ is closer to point $B$ than it is to point $C$.
	4. Point $J$ is closer to point $A$ than it is to point $B$ or point $C$.
	5. Point $K$ is closer to point $C$ than it is to point $A$ or point $B$.
	6. Point $L$ is closer to point $C$ than it is to point $A$ or point $B$.
1. Decompose the figure into regions that are closest to each vertex. Explain or show your reasoning.
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1. Which construction could be used to construct an isosceles triangle $ABC$ given line segment $AB$?
	1. Mark a third point $C$ not on segment $AB$. Draw segments $AC$ and $BC$.
	2. Label a point $C$ on segment $AB$ and construct a line perpendicular to $AB$ through point $C$. Draw segments $AC$ and $BC$.
	3. Construct the perpendicular bisector of segment $AB$. Mark the intersection of this line and $AB$ and label it $C$. Draw segments $AC$ and $BC$.
	4. Construct the perpendicular bisector of segment $AB$. Mark any point $C$ on the perpendicular bisector except where it intersects $AB$. Draw segments $AC$ and $BC$.
2. Select **all** true statements about regular polygons.
	1. All angles are right angles.
	2. All angles are congruent.
	3. All side lengths are equal.
	4. There are exactly 4 sides.
	5. There are at least 3 sides.
* (From Unit 1, Lesson 7.)
1. This diagram shows the beginning of a straightedge and compass construction of a rectangle.
* The construction followed these steps:
* 
	1. Start with two marked points $A$ and $B$
	2. Use a straightedge to construct line $AB$
	3. Use a previous construction to construct a line perpendicular to $AB$ passing through $A$
	4. Use a previous construction to construct a line perpendicular to $AB$ passing through $B$
	5. Mark a point $C$ on the line perpendicular to $AB$ passing through $A$
* Explain the steps needed to complete this construction.
* (From Unit 1, Lesson 7.)
1. This diagram is a straightedge and compass construction. Is it important that the circle with center $B$ passes through $D$ and that the circle with center $D$ passes through $B$? Show or explain your reasoning.
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* (From Unit 1, Lesson 5.)



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