### Lesson 22 Practice Problems

1. This design began from the construction of a regular hexagon. Name 2 pairs of congruent figures.
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1. This design began from the construction of a regular hexagon. Describe a rigid motion that will take the figure to itself.
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1. Noah starts with triangle $ABC$ and makes 2 new triangles by translating $B$ to $A$ and by translating $B$ to $C$. Noah thinks that triangle $DCA$  is congruent to triangle $BAC$. Do you agree with Noah? Explain your reasoning.
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* (From Unit 1, Lesson 21.)
1. In the image, triangle $ABC$ is congruent to triangle $BAD$ and triangle $CEA$. What are the measures of the 3 angles in triangle $CEA$? Show or explain your reasoning.
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* (From Unit 1, Lesson 21.)
1. In the figure shown, angle 3 is congrent to angle 6. Select **all** statements that *must* be true.
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	1. Lines $f$ and $g$ are parallel.
	2. Angle 2 is congruent to angle 6
	3. Angle 2 and angle 5 are supplementary
	4. Angle 1 is congruent to angle 7
	5. Angle 4 is congruent to angle 6
* (From Unit 1, Lesson 20.)
1. In this diagram, point $M$ is the midpoint of segment $AC$ and $B^{′}$ is the image of $B$ by a rotation of $180^{∘}$ around $M$.
	1. Explain why rotating $180^{∘}$ using center $M$ takes $A$ to $C$.
	2. Explain why angles $BAC$ and $B^{′}CA$ have the same measure.
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* (From Unit 1, Lesson 20.)
1. Lines $AB$ and $BC$ are perpendicular. The dashed rays bisect angles $ABD$ and $CBD$.
* Select**all** statements that *must*be true:
* 
	1. Angle $CBF$ is congruent to angle $DBF$
	2. Angle $CBE$ is obtuse
	3. Angle $ABC$ is congruent to angle $EBF$
	4. Angle $DBC$ is congruent to angle $EBF$
	5. Angle $EBF$ is 45 degrees
* (From Unit 1, Lesson 19.)
1. Lines $AD$ and $EC$ meet at point $B$.
* Give an example of a rotation using an angle greater than 0 degrees and less than 360 degrees, that takes both lines to themselves. Explain why your rotation works.
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* (From Unit 1, Lesson 19.)
1. Draw the image of triangle $ABC$ after this sequence of rigid transformations.
	1. Reflect across line segment $AB$.
	2. Translate by directed line segment $u$.
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* (From Unit 1, Lesson 18.)
	1. Draw the image of figure $CAST$ after a clockwise rotation around point $T$ using angle $CAS$ and then a translation by directed line segment $AS$.
	2. Describe another sequence of transformations that will result in the same image.
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* (From Unit 1, Lesson 18.)



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