### Lesson 2 Practice Problems

1. Line $SD$ is a line of symmetry for figure $AXPDZHMS$. Noah says that $AXPDS$ is congruent to $HMZDS$ because sides $AX$ and $HM$ are corresponding.
	1. Why is Noah’s congruence statement incorrect?
	2. Write a correct congruence statement for the pentagons.
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1. FIgure $MBJKGH$ is the image of figure $AFEKJB$ after being rotated 90 degrees counterclockwise about point $K$. Draw a segment in figure $AFEKJB$ to create a quadrilateral. Draw the image of the segment when rotated 90 degrees counterclockwise about point $K$.
* Write a congruence statement for the quadrilateral you created in figure $AFEKJB$ and the image of the quadrilateral in figure $MBJKGH$.
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*
1. Triangle $HEF$ is the image of triangle $FGH$ after a 180 degree rotation about point $K$. Select **all** statements that must be true.
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	1. Triangle $FGH$ is congruent to triangle $FEH$.
	2. Triangle $EFH$ is congruent to triangle $GFH$.
	3. Angle $KHE$ is congruent to angle $KFG$.
	4. Angle $GHK$ is congruent to angle $KHE$.
	5. Segment $EH$ is congruent to segment $FG$.
	6. Segment $GH$ is congruent to segment $EF$.
1. When triangle $ABC$ is reflected across line $AB$, the image is triangle $ABD$. Why are segment $AD$ and segment $AC$ congruent?
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	1. Congruent parts of congruent figures are corresponding.
	2. Corresponding parts of congruent figures are congruent.
	3. An isosceles triangle has a pair of congruent sides.
	4. Segment $AB$ is a perpendicular bisector of segment $DC$.
* (From Unit 2, Lesson 1.)
1. Elena needs to prove angles $BED$ and $BCA$ are congruent. Provide reasons to support each of her statements.
	1. Line $m$ is parallel to line $l$.
	2. Angles $BED$ and $BCA$ are congruent.
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* (From Unit 1, Lesson 20.)
1. Triangle $FGH$ is the image of isosceles triangle $FEH$ after a reflection across line $HF$. Select **all** the statements that are a result of corresponding parts of congruent triangles being congruent.
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	1. $EFGH$ is a rectangle.
	2. $EFGH$ is a rhombus.
	3. Diagonal $FH$ bisects angles $EFG$ and $EHG$.
	4. Diagonal $FH$ is perpendicular to side $FE$.
	5. Angle $EHF$ is congruent to angle $FGH$.
	6. Angle $FEH$ is congruent to angle $FGH$.
* (From Unit 2, Lesson 1.)
1. This design began from the construction of a regular hexagon.
	1. Draw 1 segment so the diagram has another hexagon that is congruent to hexagon $ABCIHG$.
	2. Explain why the hexagons are congruent.
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* (From Unit 1, Lesson 22.)



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