### Lesson 18 Practice Problems

1. The figures are congruent. Select **all** the sequences of transformations that would take Figure 1 to Figure 2.
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	1. Translate by directed line segment $AD$.
	2. Rotate 180 degrees around point $E$.
	3. Translate by directed line segment $AE$ and reflect across $AC$.
	4. Translate by directed line segment $CE$ and rotate 90 degrees counterclockwise around point $E$.
	5. Rotate 180 degrees around point $C$, translate by directed line segment $CE$, and reflect across segment $EF$.
	6. Reflect across segment $AB$, rotate clockwise by angle $BFE$ using center $F$, then reflect across segment $EF$.
	7. Draw the image of figure $ACTS$ after a clockwise rotation around point $T$ using angle $CTS$ and then a translation by directed line segment $CT$.
	8. Describe another sequence of transformations that will result in the same image.
* 
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 $u$.
* 
1. Describe atransformation that takes any point $A$ to any point $B$.
* (From Unit 1, Lesson 17.)
1. Triangle $ABC$ is congruent to triangle $A^{′}B^{′}C^{′}$.  Describe a sequence of rigid motions that takes $A$ to $A^{′}$, $B$ to $B^{′}$, and $C$ to $C^{′}$.
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* (From Unit 1, Lesson 17.)
1. A quadrilateral has rotation symmetry that can take any of its vertices to any of its other vertices. Select **all** conclusions that we can reach from this.
	1. All sides of the quadrilateral have the same length.
	2. All angles of the quadrilateral have the same measure.
	3. All rotations take one half of the quadrilateral to the other half of the quadrilateral.
* (From Unit 1, Lesson 16.)
1. A quadrilateral has a line of symmetry. Select **all** conclusions that *must* be true.
	1. All sides of the quadrilateral have the same length.
	2. All angles of the quadrilateral have the same measure.
	3. Two sides of the quadrilateral have the same length.
	4. Two angles of the quadrilateral have the same measure.
	5. No sides of the quadrilateral have the same length.
	6. No angles of the quadrilateral have the same measure.
* (From Unit 1, Lesson 15.)
1. Which segment is the image of $FG$ when rotated $90^{∘}$ clockwise around point $P$?
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* (From Unit 1, Lesson 14.)
1. Which statement is true about a translation?
	1. A translation rotates a line.
	2. A translation takes a line to a parallel line or itself.
	3. A translation takes a line to a perpendicular line.
	4. A translation dilates a line.
* (From Unit 1, Lesson 12.)



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