### Lesson 3 Practice Problems

1. Triangle $ABC$ is congruent to triangle $EDF$. So, Kiran knows that there is a sequence of rigid motions that takes $ABC$ to $EDF$.
* 
* Select **all** true statements after the transformations:
	1. Angle $A$ coincides with angle $F$.
	2. Angle $B$ coincides with angle $D$.
	3. Segment $AC$ coincides with segment $EF$.
	4. Segment $BC$ coincides with segment $ED$.
	5. Segment $AB$ coincides with segment $ED$.
1. A rotation by angle $ACE$ using point $C$ as the center takes triangle $CBA$ onto triangle $CDE$.
* 
	1. Explain why the image of ray $CA$ lines up with ray $CE$.
	2. Explain why the image of $A$ coincides with $E$.
	3. Is triangle $CBA$ congruent to triangle $CDE$? Explain your reasoning.
1. The triangles are congruent. Which sequence of rigid motions will take triangle $XYZ$ onto triangle $BCA$?
* 
	1. Translate $XYZ$ using directed line segment $YC$. Rotate $X^{′}Y^{′}Z^{′}$ using $C$ as the center so that $X^{′}$ coincides with $B$. Reflect $X^{″}Y^{″}Z^{″}$ across line $CB$.
	2. Translate $XYZ$ using directed line segment $YC$. Rotate $X^{′}Y^{′}Z^{′}$ using $C$ as the center so that $X^{′}$ coincides with $B$. Reflect $X^{″}Y^{″}Z^{″}$ across line $AC$.
	3. Translate $XYZ$ using directed line segment $YC$. Rotate $X^{′}Y^{′}Z^{′}$ using $C$ as the center so that $X^{′}$ coincides with $A$. Reflect $X^{″}Y^{″}Z^{″}$ across line $CB$.
	4. Translate $XYZ$ using directed line segment $YC$. Rotate $X^{′}Y^{′}Z^{′}$ using $C$ as the center so that $X^{′}$ coincides with $A$. Reflect $X^{″}Y^{″}Z^{″}$ across line $AC$.
1. Triangle $HEF$ is the image of triangle $FGH$ after a 180 degree rotation around point $K$. Select **all** statements that must be true.
* 
	1. Triangle $HGF$ is congruent to triangle $FEH$.
	2. Triangle $GFH$ is congruent to triangle $EFH$.
	3. Angle $KHE$ is congruent to angle $KHG$.
	4. Angle $GHK$ is congruent to angle $EFK$.
	5. Segment $EH$ is congruent to segment $GH$.
	6. Segment $HG$ is congruent to segment $FE$.
	7. Segment $FH$ is congruent to segment $HF$.
* (From Unit 2, Lesson 2.)
1. Line $SD$ is a line of symmetry for figure $ASMHZDPX$. Tyler says that $ASDPX$ is congruent to $SMDZH$ because sides $AS$ and $MS$ are corresponding.
* 
	1. Why is Tyler's congruence statement incorrect?
	2. Write a correct congruence statement for the pentagons.
* (From Unit 2, Lesson 2.)
1. Triangle $ABC$ is congruent to triangle $DEF$.  Select **all** the statements that are a result of corresponding parts of congruent triangles being congruent.
* 
	1. Segment $AC$ is congruent to segment $EF$.
	2. Segment $BC$ is congruent to segment $EF$.
	3. Angle $BAC$ is congruent to angle $EDF$.
	4. Angle $BCA$ is congruent to angle $EDF$.
	5. Angle $CBA$ is congruent to angle $FED$.
* (From Unit 2, Lesson 1.)
1. When triangle $ABC$ is reflected across line $AB$, the image is triangle $ABD$. Why is angle $ACD$ congruent to angle $ADB$?
* 
	1. Corresponding parts of congruent figures are congruent.
	2. Congruent parts of congruent figures are corresponding.
	3. Segment $AB$ is a perpendicular bisector of segment $DC$.
	4. An isosceles triangle has a pair of congruent angles.
* (From Unit 2, Lesson 1.)
1. Line $DE$ is parallel to line $BC$.
	1. What is the measure of angle $EAC$?
	2. What is the measure of angle $DAB$?
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* (From Unit 1, Lesson 21.)



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