### Lesson 4 Practice Problems

1. Match each statement using only the information shown in the pairs of congruent triangles.
	1. In the 2 triangles there are 3 pairs of congruent sides.
	2. The 2 sides and the included angle of one triangle are congruent to 2 sides and the included angle of another triangle.
	3. The 2 angles and the included side of one triangle are congruent to 2 angles and the included side of another triangle.
	4. 
	5. 
	6. 
2. Sketch the unique triangles that can be made with angle measures $40^{∘}$ and $100^{∘}$ and side length 3. How do you know you have sketched all possibilities?
3. What is the least amount of information that you need to construct a triangle congruent to this one?
* 
1. Triangle $ABC$ is congruent to triangle $EDF$. So, Mai 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 $E$.
	2. Angle $B$ coincides with angle $F$.
	3. Segment $AB$ coincides with segment $EF$.
	4. Segment $BC$ coincides with segment $DF$.
	5. Segment $AC$ coincides with segment $ED$.
* (From Unit 2, Lesson 3.)
1. A rotation by angle $ACE$ using point $C$ as the center takes triangle $CBA$ onto triangle $CDE$.
* 
	1. Explain why the image of segment $CB$ lines up with segment $CD$.
	2. Explain why the image of $B$ coincides with $D$.
	3. Is triangle $ABC$ congruent to triangle $EDC$? Explain your reasoning.
* (From Unit 2, Lesson 3.)
1. Line $EF$ is a line of symmetry for figure $ABECDF$. Clare says that $ABEF$ is congruent to $CDFE$ because sides $AB$ and $CD$ are corresponding.
* 
	1. Why is Clare's congruence statement incorrect?
	2. Write a correct congruence statement for the quadrilaterals.
* (From Unit 2, Lesson 2.)
1. Triangle $HEF$ is the image of triangle $HGF$ after a reflection across line $FH$. Select **all** statements that must be true.
* 
	1. Triangle $FGH$ is congruent to triangle $FEH$.
	2. Triangle $EFH$ is congruent to triangle $GFH$.
	3. Angle $HFE$ is congruent to angle $FHG$.
	4. Angle $EFG$ is congruent to angle $EHG$.
	5. Segment $EH$ is congruent to segment $FG$.
	6. Segment $GH$ is congruent to segment $EH$.
* (From Unit 2, Lesson 2.)
1. When rectangle $ABCD$ is reflected across line $EF$, the image is $BADC$. How do you know that segment $AD$ is congruent to segment $BC$?
* 
	1. A rectangle has 2 pairs of parallel sides.
	2. Any 2 sides of a rectangle are congruent.
	3. Corresponding parts of congruent figures are congruent.
	4. Congruent parts of congruent figures are corresponding.
* (From Unit 2, Lesson 1.)
1. This design began from the construction of a regular hexagon. Describe a rigid motion that will take the figure onto itself.
* 
* (From Unit 1, Lesson 22.)



© CC BY 2019 by Illustrative Mathematics®