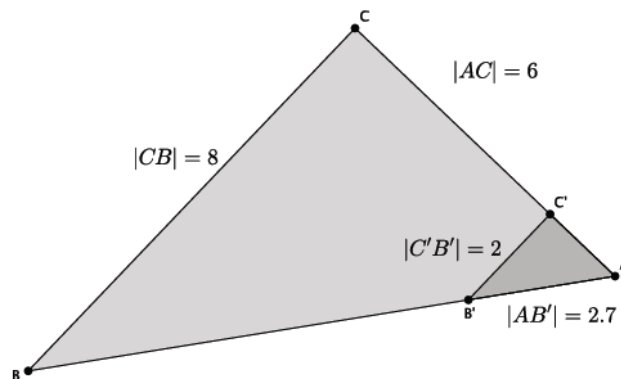# Lesson 11: More About Similar Triangles

Classwork
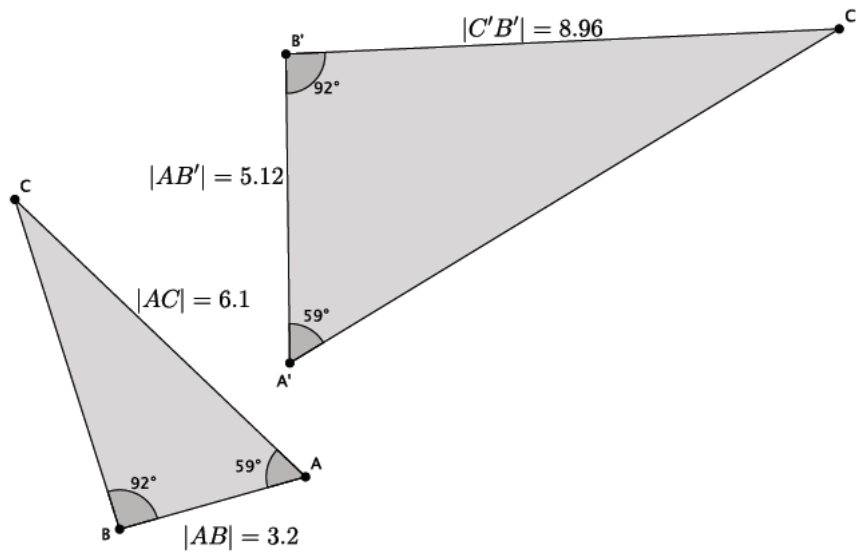
Exercises

1. In the diagram below, you have $\triangle ABC$ and $\triangle AB'C'$. Use this information to answer parts (a)–(d).

$|AC| = 6$
$|CB| = 8$
$|C'B'| = 2$
$|AB'| = 2.7$

a. Based on the information given, is $\triangle ABC \sim \triangle AB'C'$? Explain.

b. Assume line BC is parallel to line $B'C'$. With this information, can you say that $\triangle ABC \sim \triangle AB'C'$? Explain.

c. Given that $\triangle ABC \sim \triangle AB'C'$, determine the length of side AC'.

d. Given that $\triangle ABC \sim \triangle AB'C'$, determine the length of side AB.

2. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer parts (a)–(c).
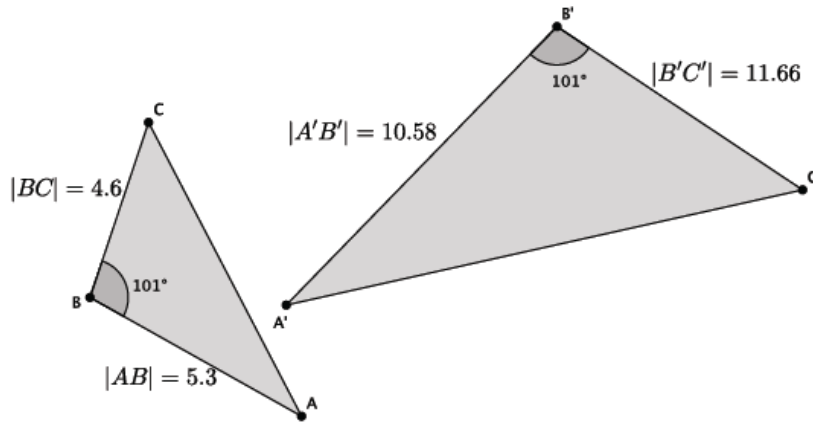

a. Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.

b. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side $A'C'$.

c. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side BC.
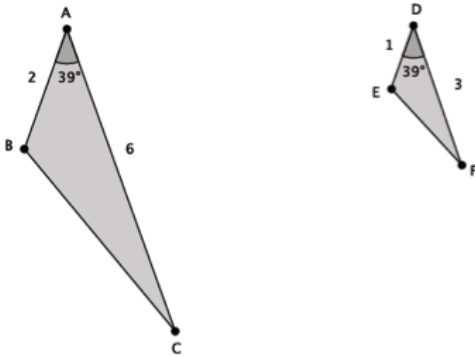
3. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer the question below.

Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.

Lesson Summary

Given just one pair of corresponding angles of a triangle as equal, use the side lengths along the given angle to determine if triangles are in fact similar.
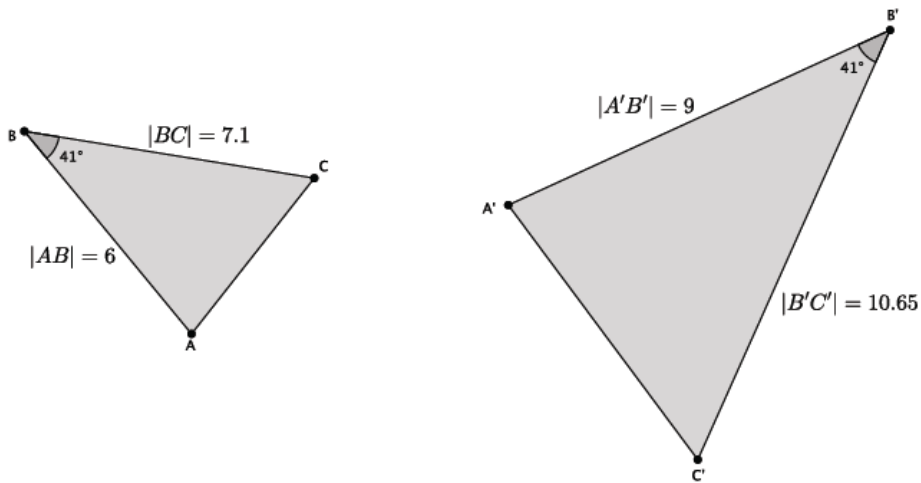

$|\angle A| = |\angle D|$ and $\dfrac{1}{2} = \dfrac{3}{6} = r$; therefore,

$\triangle ABC \sim \triangle DEF$.

Given similar triangles, use the fact that ratios of corresponding sides are equal to find any missing measurements.

Problem Set

1. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer parts (a)–(b).
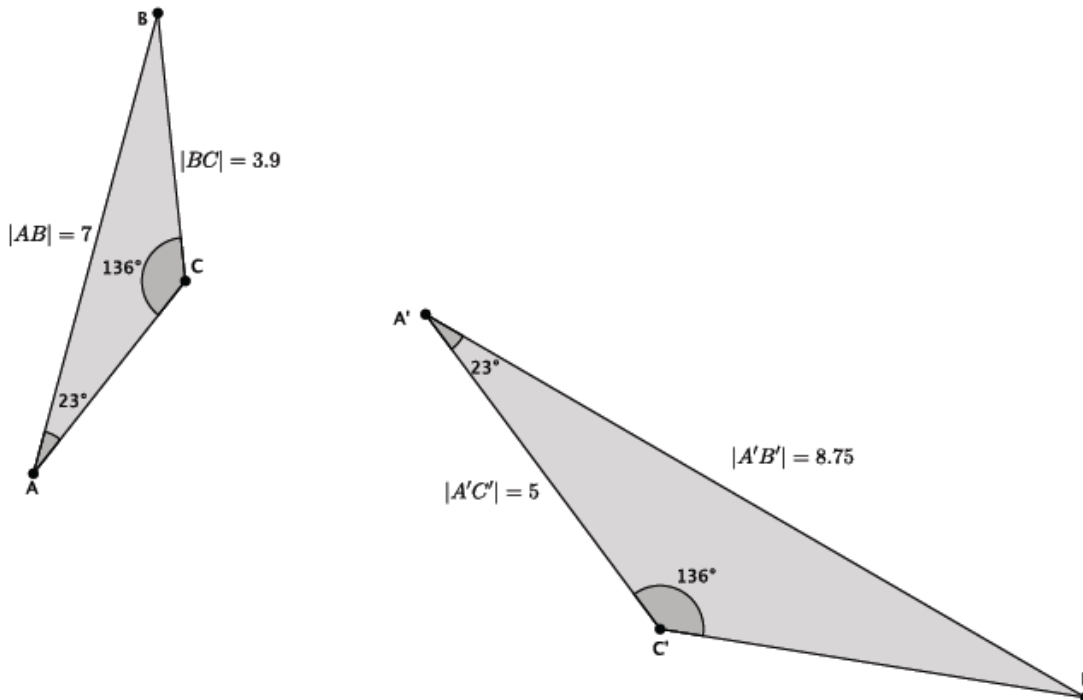

a. Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.

b. Assume the length of side AC is 4.3. What is the length of side $A'C'$?

2. In the diagram below, you have $\triangle ABC$ and $\triangle AB'C'$. Use this information to answer parts (a)–(d).
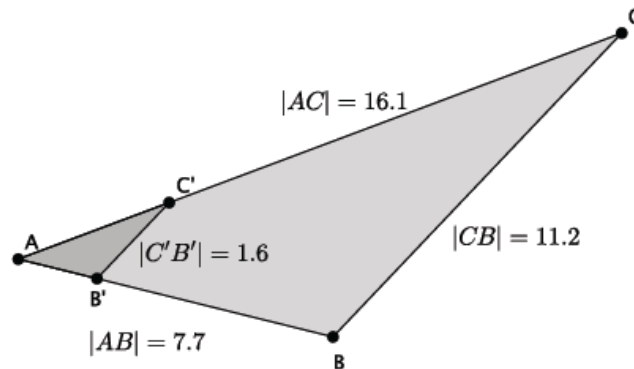

$|AC| = 16.1$

$|C'B'| = 1.6$

$|CB| = 11.2$

$|AB| = 7.7$

   a. Based on the information given, is $\triangle ABC \sim \triangle AB'C'$? Explain.
   b. Assume line BC is parallel to line $B'C'$. With this information, can you say that $\triangle ABC \sim \triangle AB'C'$? Explain.
   c. Given that $\triangle ABC \sim \triangle AB'C'$, determine the length of side AC'.
   d. Given that $\triangle ABC \sim \triangle AB'C'$, determine the length of side AB'.

3. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer parts (a)–(c).

$|BC| = 3.9$

$|AB| = 7$

$136°$

$23°$

$23°$

$|A'B'| = 8.75$
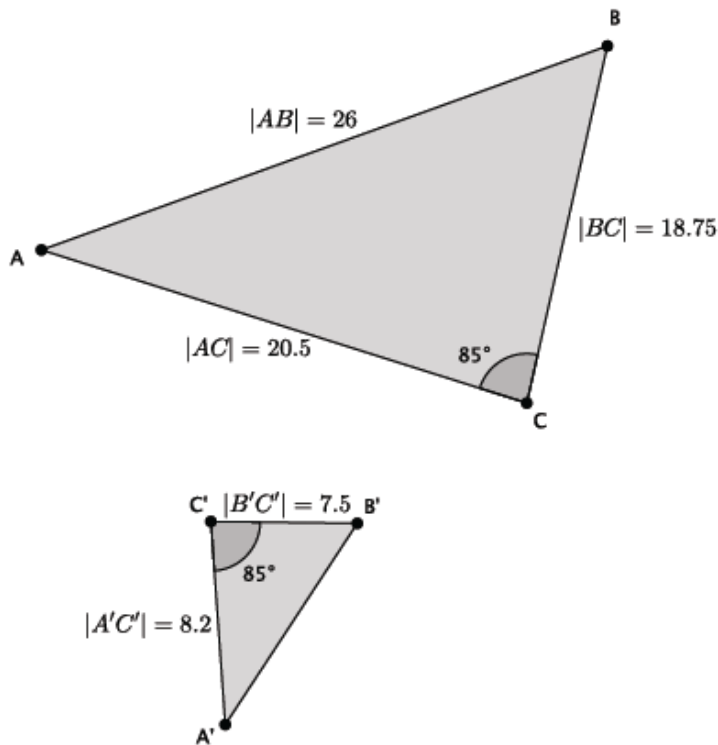
$|A'C'| = 5$

$136°$

   a. Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.
   b. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side $B'C'$.
   c. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side AC.

4. In the diagram below, you have $\triangle ABC$ and $\triangle AB'C'$. Use this information to answer the question below.

$|AC| = 12.6$

$|AC'| = 4.1$

$|AB'| = 3$

$|AB| = 9$
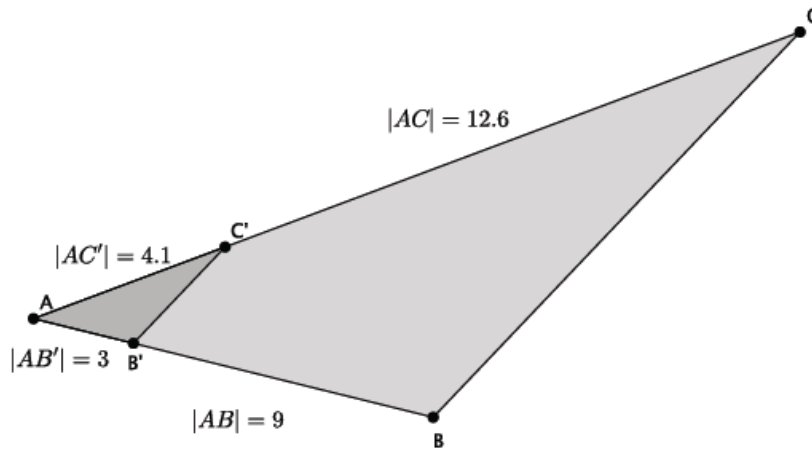
Based on the information given, is $\triangle ABC \sim \triangle AB'C'$? Explain.

5. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer parts (a)–(b).

$|AB| = 26$

$|BC| = 18.75$

$|AC| = 20.5$

$85°$

$|B'C'| = 7.5$

$85°$

$|A'C'| = 8.2$

a. Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.

b. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side $A'B'$.