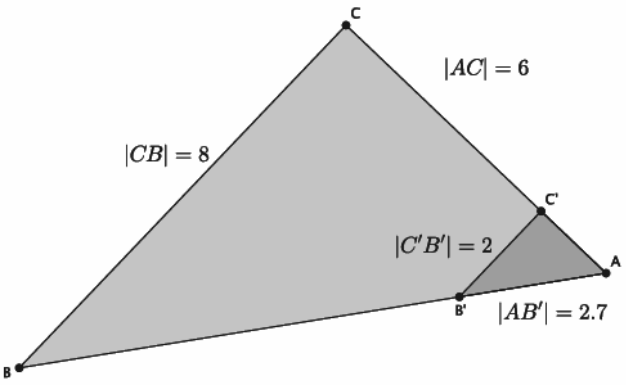
Lesson 11: More About Similar Triangles

Classwork

Exercises

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



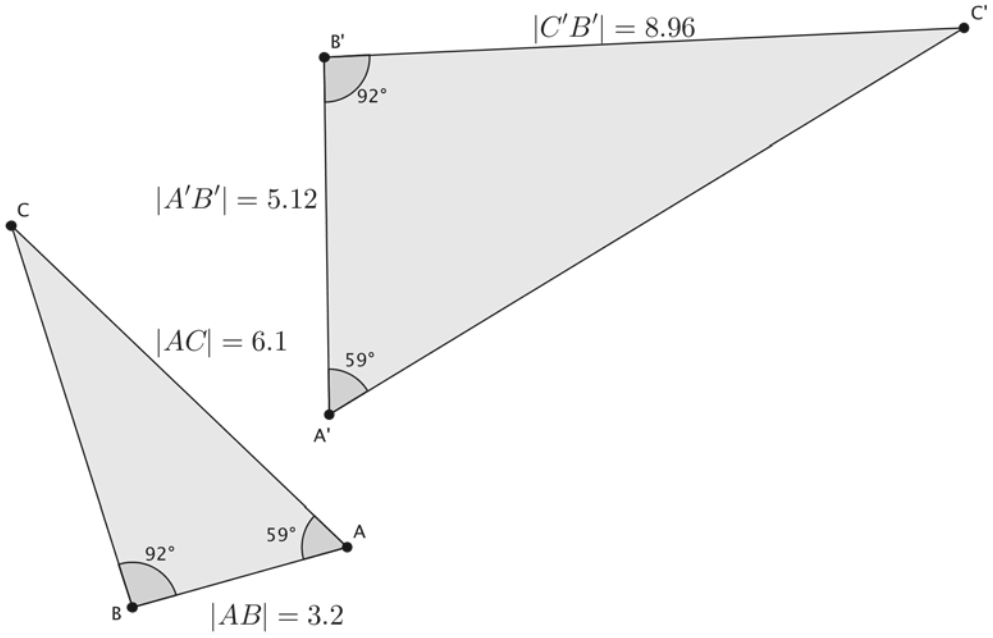
a. Based on the information given, is $\triangle ABC \sim \triangle AB'C'$? Explain.

b. Assume the line containing $\overline{BC}$ is parallel to the line containing $\overline{B'C'}$. 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 $\overline{AC'}$.

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

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

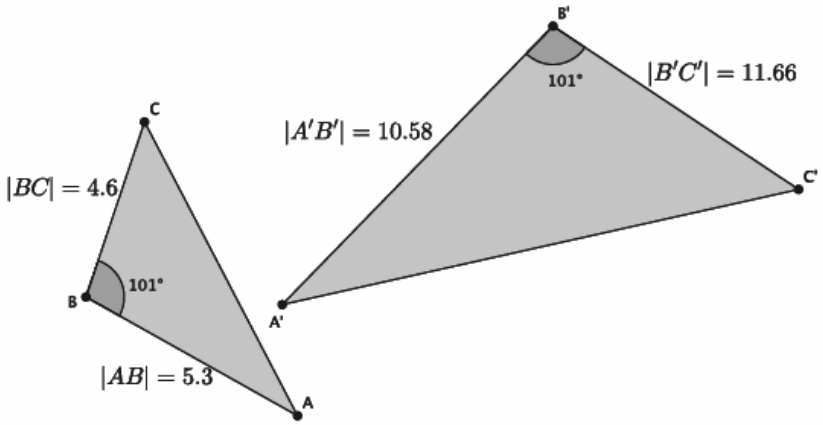


a. Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.

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

c. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side $\overline{BC}$.

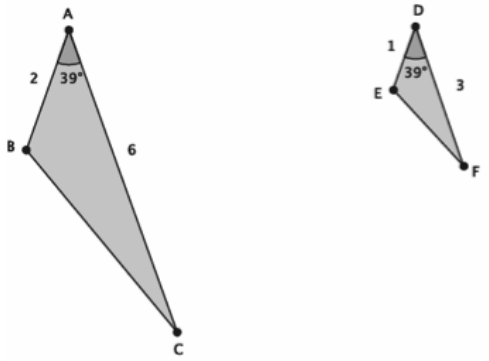
3. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer the question below.



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 in measure, use the side lengths along the given angle to determine if the triangles are in fact similar.

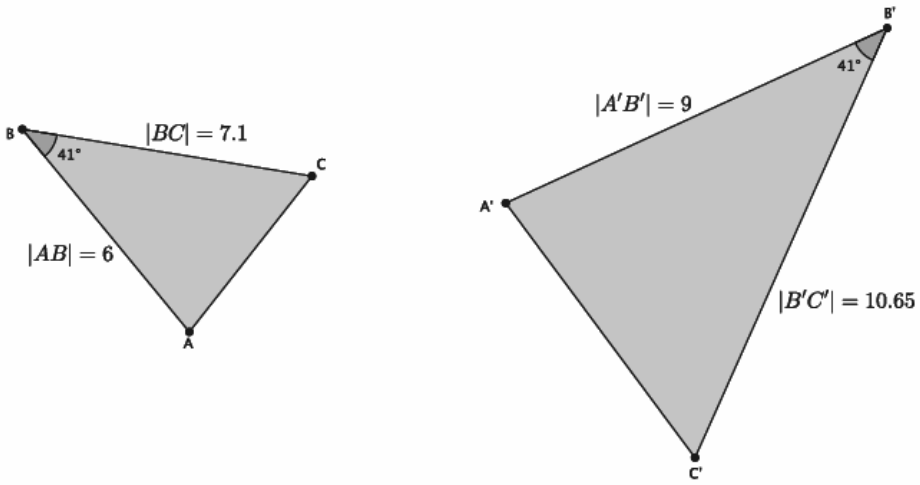


$|\angle A| = |\angle D|$ and $\frac{1}{2} = \frac{3}{6} = r$; therefore, $\triangle ABC \sim \triangle DEF$.

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

Problem Set

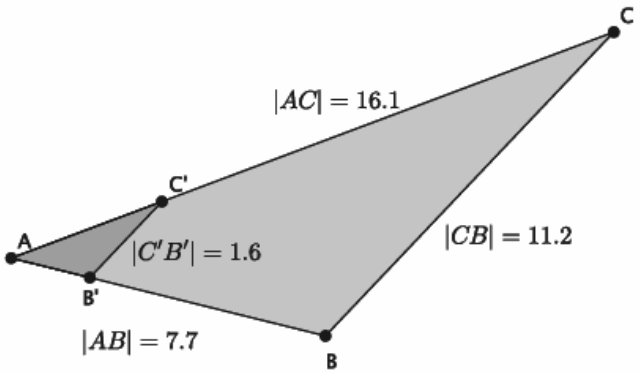
1. In the diagram below, you have $\triangle ABC$ and $\triangle A'B'C'$. Use this information to answer parts (a)–(b).



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

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

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



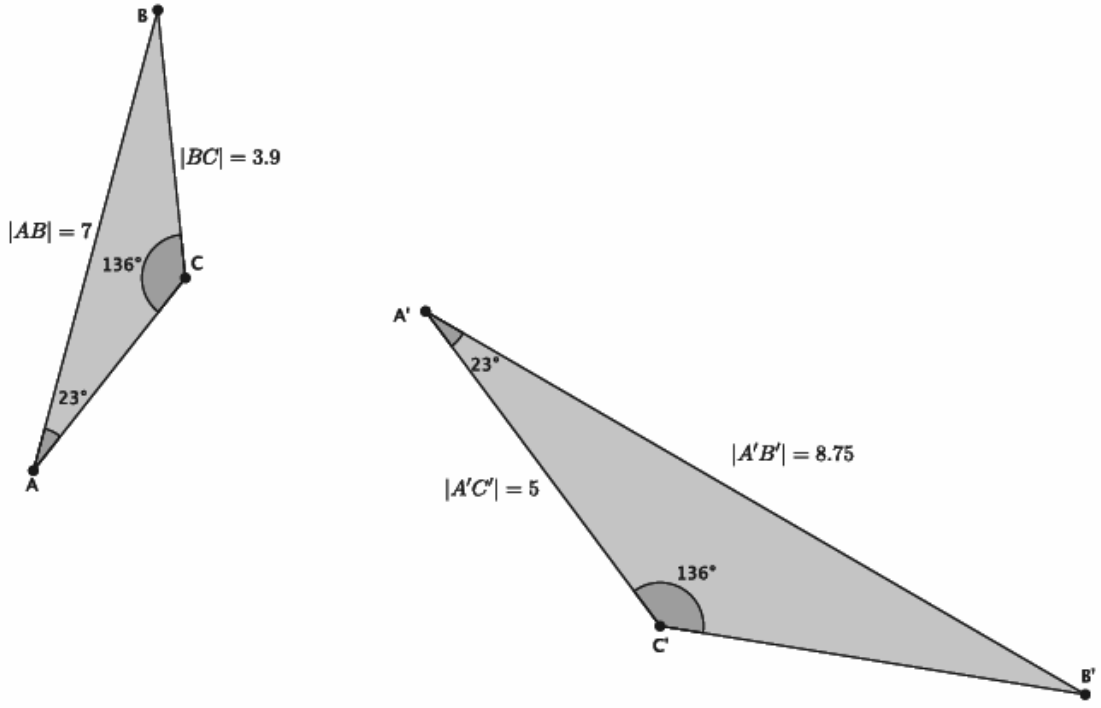
a. Based on the information given, is $\triangle ABC \sim \triangle AB'C'$? Explain.

b. Assume the line containing $\overline{BC}$ is parallel to the line containing $\overline{B'C'}$. 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 $\overline{AC'}$.

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

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

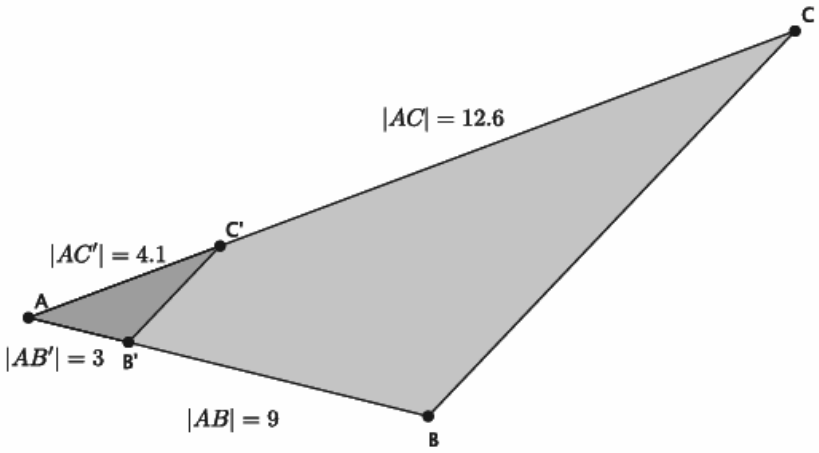


a. Based on the information given, is $\triangle ABC \sim \triangle A'B'C'$? Explain.

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

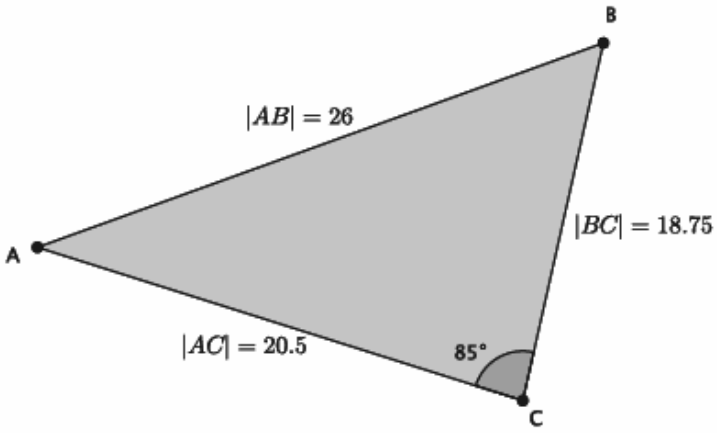
c. Given that $\triangle ABC \sim \triangle A'B'C'$, determine the length of side $\overline{AC}$.

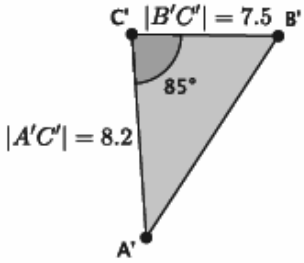
4. In the diagram below, you have $\triangle ABC$ and $\triangle AB'C'$. Use this information to answer the question below.



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).





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 $\overline{A'B'}$.