3.4 Exercises

Check It Out
Help with Homework
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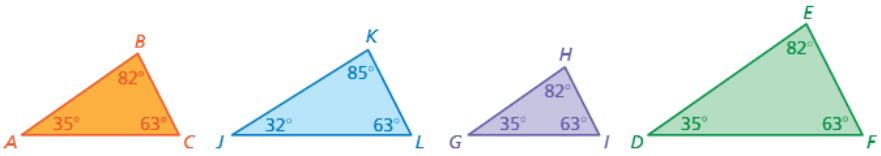
Vocabulary and Concept Check

1. **REASONING** How can you use similar triangles to find a missing measurement?
2. **WHICH ONE DOESN'T BELONG?** Which triangle does *not* belong with the other three? Explain your reasoning.



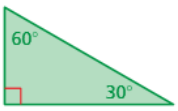
3. **WRITING** Two triangles have two pairs of congruent angles. In your own words, explain why you do not need to find the measures of the third pair of angles to determine that they are congruent.

Practice and Problem Solving

Make a triangle that is larger or smaller than the one given and has the same angle measures. Find the ratios of the corresponding side lengths.

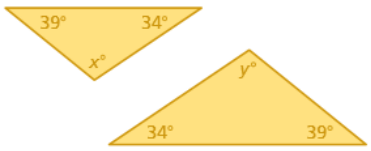
4.

5.



Tell whether the triangles are similar. Explain.

6.



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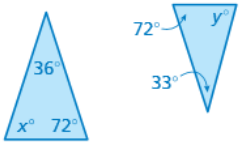

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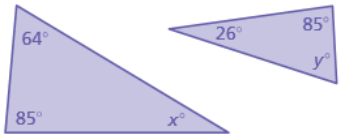

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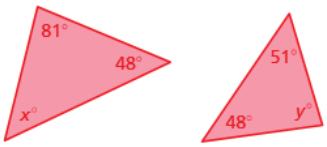
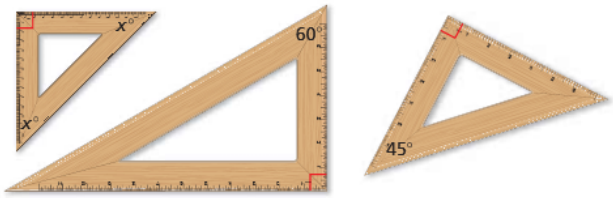
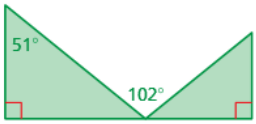


10. **RULERS** Which of the rulers are similar in shape? Explain.



Tell whether the triangles are similar. Explain.

11.



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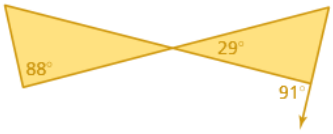
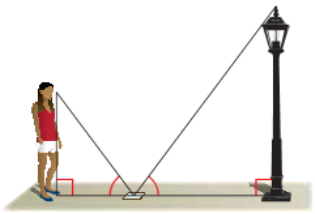


13. TREASURE The map shows the number of steps you must take to get to the treasure. However, the map is old, and the last dimension is unreadable. Explain why the triangles are similar. How many steps do you take from the pyramids to the treasure?

14. CRITICAL THINKING The side lengths of a triangle are increased by 50% to make a similar triangle. Does the area increase by 50% as well? Explain.

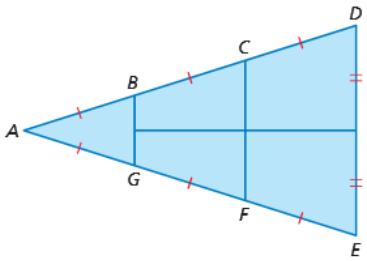


15. PINE TREE A person who is 6 feet tall casts a 3-foot-long shadow. A nearby pine tree casts a 15-foot-long shadow. What is the height h of the pine tree?

16. OPEN-ENDED You place a mirror on the ground 6 feet from the lamppost. You move back 3 feet and see the top of the lamppost in the mirror. What is the height of the lamppost?

17. REASONING In each of two right triangles, one angle measure is two times another angle measure. Are the triangles similar? Explain your reasoning.

18. Geometry In the diagram, segments BG, CF, and DE are parallel. The length of segment BD is 6.32 feet, and the length of segment DE is 6 feet. Name all pairs of similar triangles in the diagram. Then find the lengths of segments BG and CF.



Fair Game Review What you learned in previous grades & lessons

Solve the equation for y. *(Section 1.4)*

19. $y - 5x = 3$ **20.** $4x + 6y = 12$ **21.** $2x - \frac{1}{4}y = 1$

22. MULTIPLE CHOICE What is the value of x? *(Section 3.2)*

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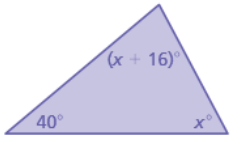
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