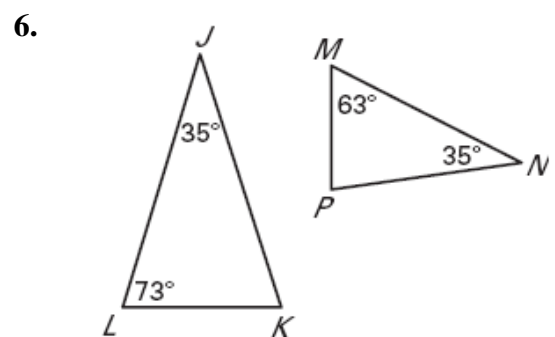
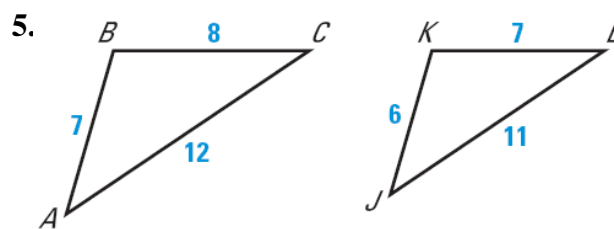
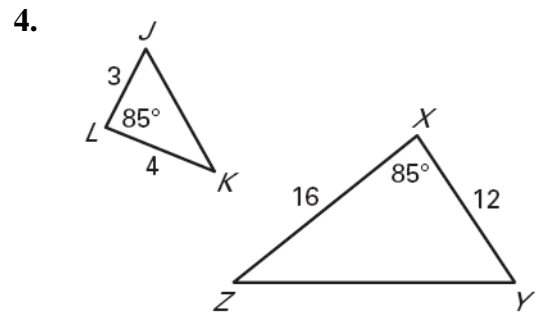
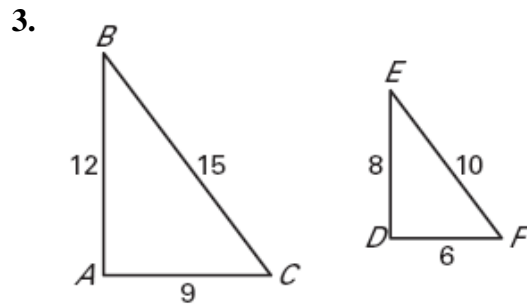
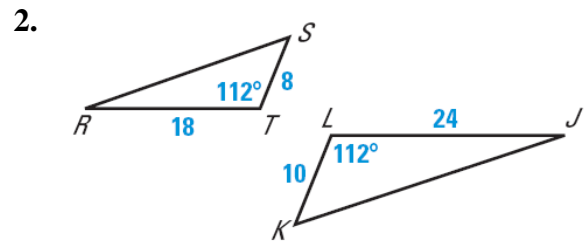
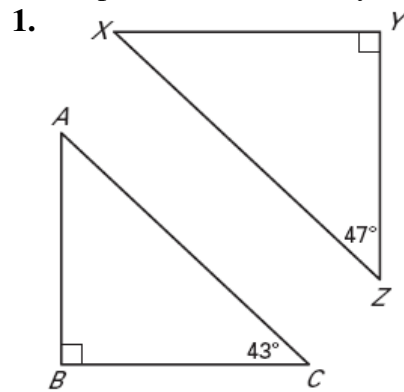


Geometry
Assignment 6.5

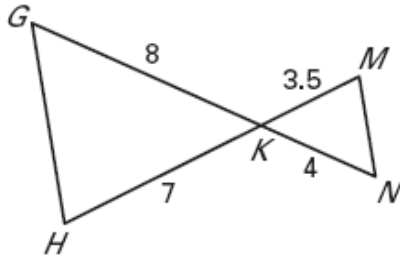
Name: _____

Determine if the triangles are similar. If so, provide a reason by stating a shortcut.
If not, provide a reason why.

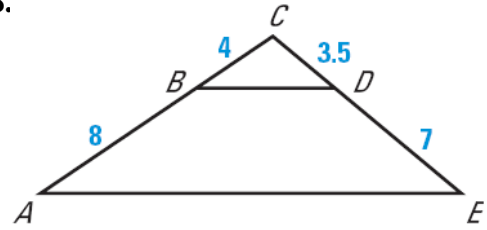


Determine if the triangles are similar. If so, provide a reason by stating a shortcut. If not, provide a reason why.

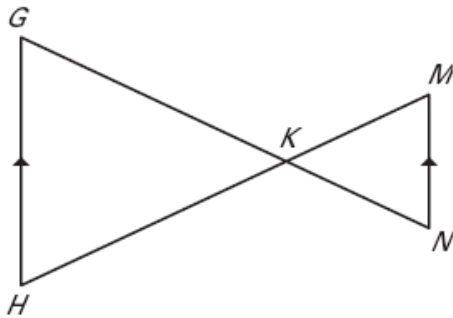
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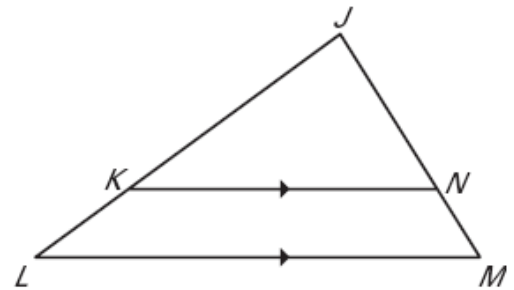
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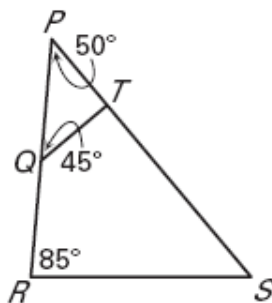
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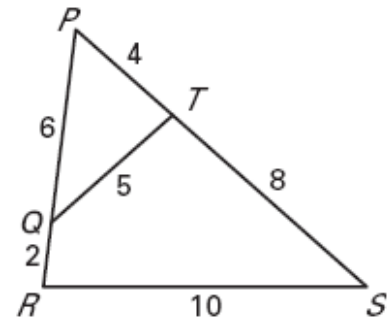
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11.

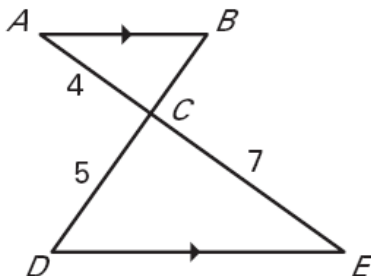


12.

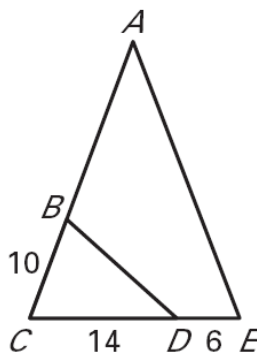


13. Find the value of m that makes $\triangle ABC \sim \triangle DEF$ when $AB = 3$, $BC = 4$, $DE = 2m$, $EF = m + 5$.

14. Find the length of \overline{BC} .



15. In the diagram at the right $\triangle CBD \sim \triangle CEA$, Find the length of \overline{AB} .

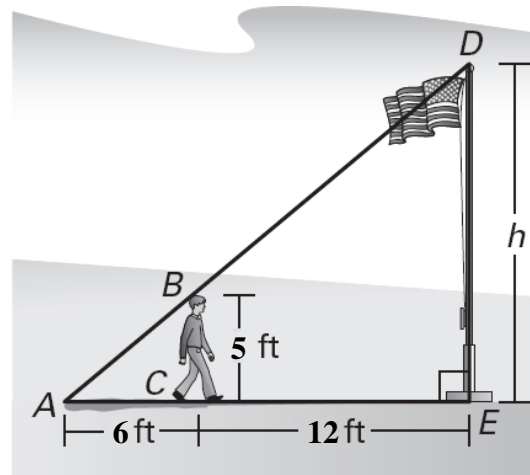


16. Sketch the triangles using the given description. Explain whether the two triangles can be similar. The side lengths of $\triangle ABC$ are 8, 10 and 14. The side lengths of $\triangle DEF$ are 16, 20 and 26.

17. Overlapping Shadows and Similar Triangles A painter is preparing an estimate to paint a building. To approximate the building's height, he stands so that the top of his shadow coincides (overlaps) with that of the building. The painter uses the measurements shown in the figure.

a) What shortcut can be used to show that the triangles are similar?

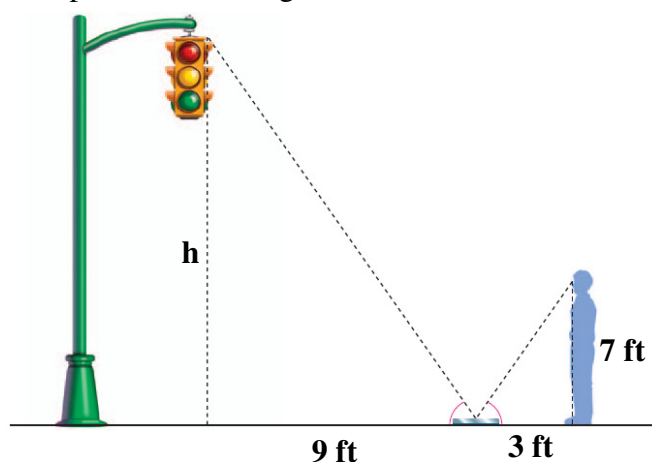
b) What is the approximate height of the building?



18. Mirror and Similar Triangles In order to estimate the height of the street light, a student places a mirror on the ground and stands where she can see the top of the traffic light, as shown below.

a) What shortcut can be used to show that the triangles are similar?

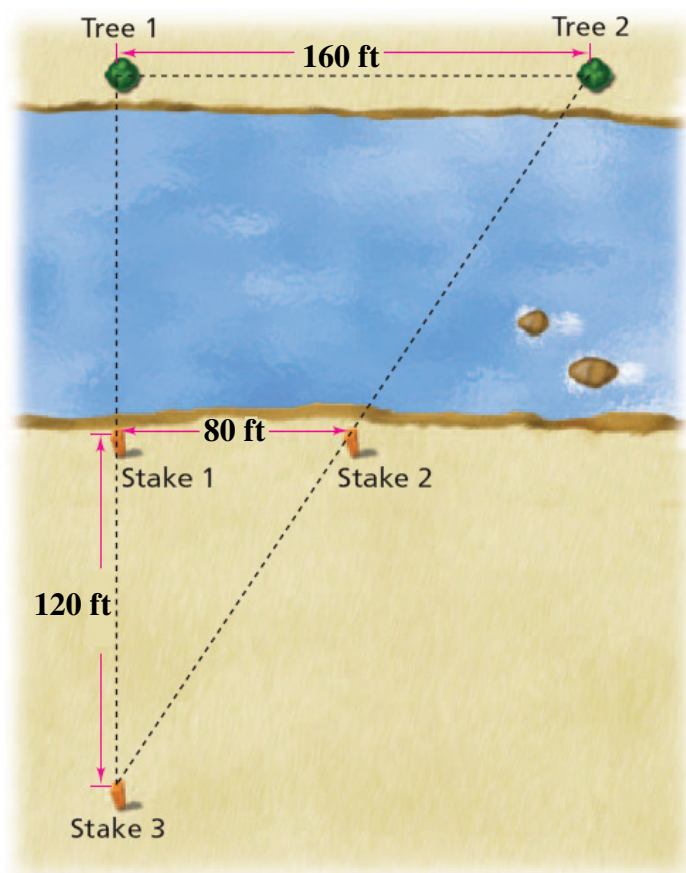
b) What is the height of the traffic light?



19. Landmarks and Similar Triangles A student places three stakes (Wooden Poles) and uses two trees to determine the width of a river. The distance between stake 1 and stake 2 is 80 ft. The distance between Stake 1 and Stake 3 is 120 ft. The distance between the trees is 160 ft.

a) What shortcut can be used to show that the triangles are similar?

b) What is the width of the river?



Answer Key:

- 1) Yes, by AA 2) No, side lengths are not proportional 3) Yes, by SSS 4) Yes, by SAS
 5) No, side lengths are not proportional 6) No, not all \angle 's are \cong 7) Yes, by SAS 8) Yes, by SAS
 9) Yes, by AA 10) Yes, by AA 11) Yes, by AA 12) Yes, by SSS or SAS 13) $m = 3$
 14) $BC = 2\frac{6}{7}$ 15) $AB = 18$ 16) No, side lengths are not proportional 17) a) AA b) $h = 15$ ft
 18) a) AA b) $h = 21$ ft 19) a) AA b) $w = 120$ ft