Geometry Name:_____
Assignment 6.6

1. The symbol for congruence is ____.

2. The symbol for similarity is ____.

3. What congruence and similarity both share in common is that all _____ are congruent.

4. What makes congruence different from similarity is that for congruence all sides are _____ whereas with similarity the _____ of corresponding sides are equal.

5. If two figures are similar and the ratios of their corresponding sides is __ to __, then they are also congruent.

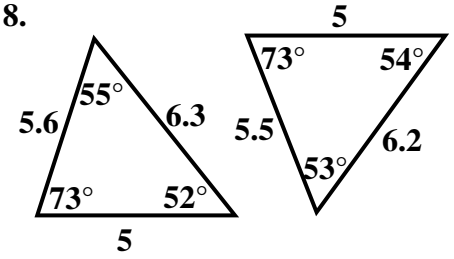
Write all the information that can be pulled out from the given information.

6. Given $\Delta ABC \cong \Delta DEF$

7. Given $\Delta ABC \sim \Delta DEF$

Determine if the triangles are congruent, similar, both, or neither.

8.



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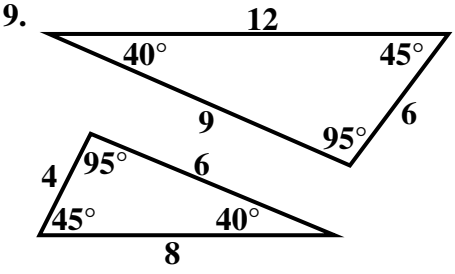
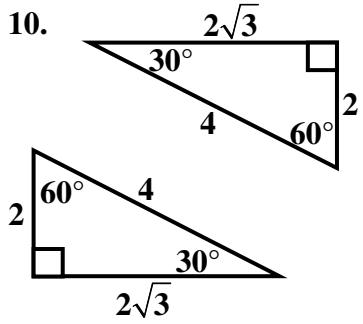


10.



Determine if the statement is always, sometimes, or never true. Use a diagram to support your answer.

11. If two triangles are congruent, then they are not similar.

12. If two triangles are similar, then they are congruent.

13. If two triangles are congruent, then they are similar.

14. Which triangles must be similar?

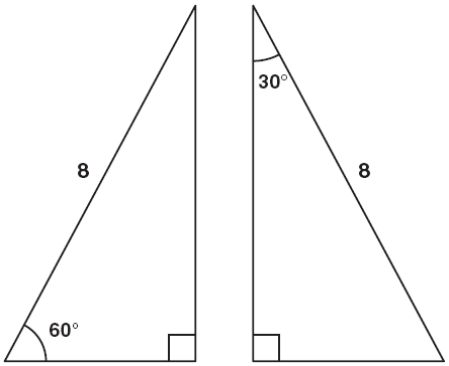
A two right triangles

B two scalene triangles with congruent bases

C two obtuse triangles

D two isosceles triangles with congruent vertex angles

15. Which of the following best describes the triangles shown below?



A neither similar nor congruent

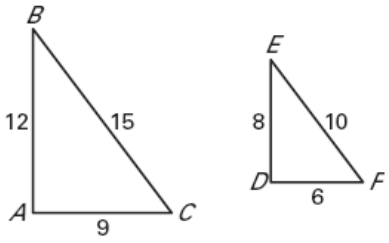
B similar but not congruent

C congruent but not similar

D both similar and congruent

Determine if the triangles are similar. If so, provide a reason by stating a shortcut.

16.



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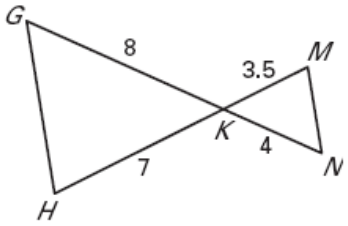
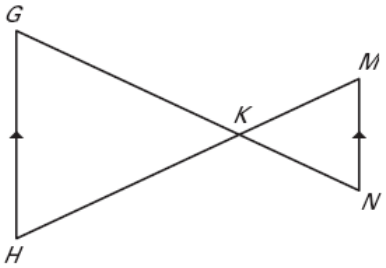


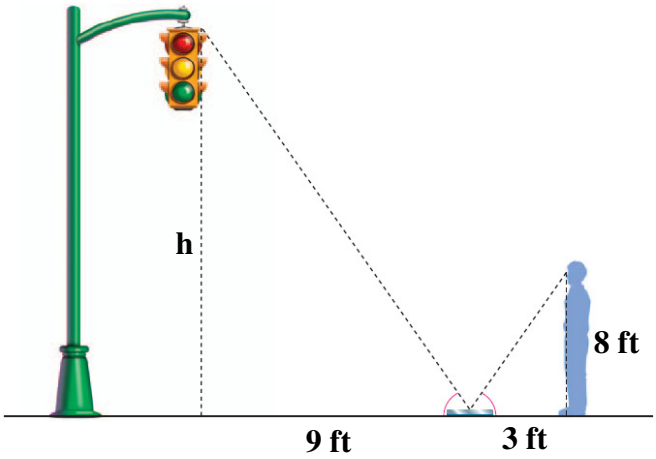
18.



19. 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 tree, as shown.

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

b) What is the height of the traffic light?



Answer Key:

1) $\cong$ **2)** $\sim$ **3)** angles **4)** equal, ratios **5)** 1 to 1 **6)** $\angle A \cong \angle D, \angle B \cong \angle E, \angle C \cong \angle F$, $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \overline{AC} \cong \overline{DF}$

7) $\angle A \cong \angle D, \angle B \cong \angle E, \angle C \cong \angle F$ and $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$ **8)** Neither **9)** Similar **10)** Both **11)** Never

12) Sometimes **13)** Always **14)** D **15)** D **16)** Yes, by SSS **17)** Yes, by SAS **18)** Yes, by AA

19) a) AA **b)** 24 ft