

6.4

Prove Triangles Similar by AA

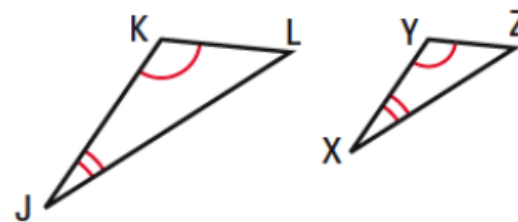
Goal • Use the AA Similarity Postulate.

POSTULATE

For Your Notebook

POSTULATE 22 Angle-Angle (AA) Similarity Postulate

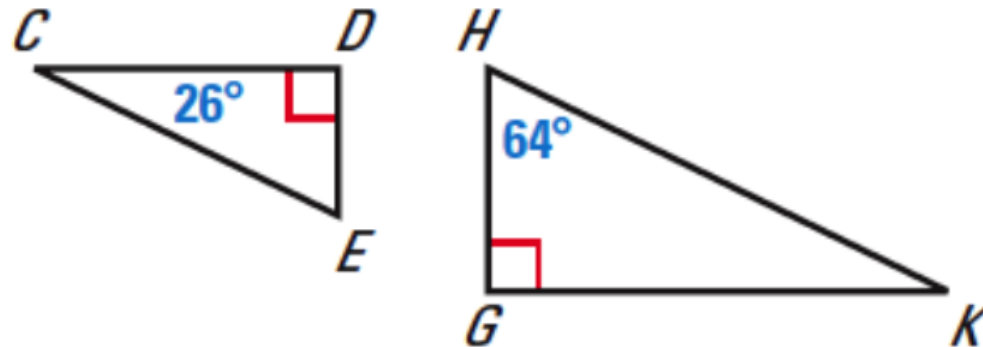
If two angles of one triangle are congruent to two angles of another triangle, then the two triangles are similar.



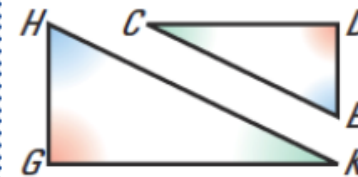
$$\triangle JKL \sim \triangle XYZ$$

EXAMPLE 1 Use the AA Similarity Postulate

Determine whether the triangles are similar. If they are, write a similarity statement. Explain your reasoning.



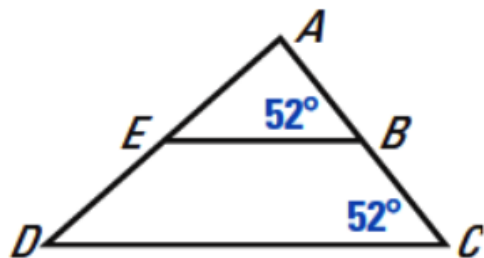
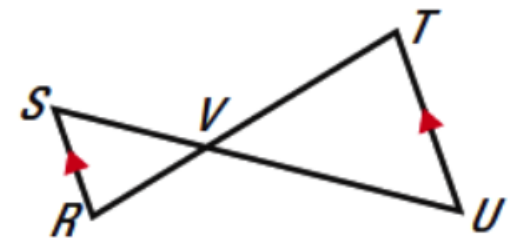
N DIAGRAMS



Use colored pencils to show congruent angles. This will help you write similarity statements.

EXAMPLE 2 Show that triangles are similar

Show that the two triangles are similar.

a. $\triangle ABE$ and $\triangle ACD$ b. $\triangle SVR$ and $\triangle UVT$ 



EXAMPLE 3 Standardized Test Practice

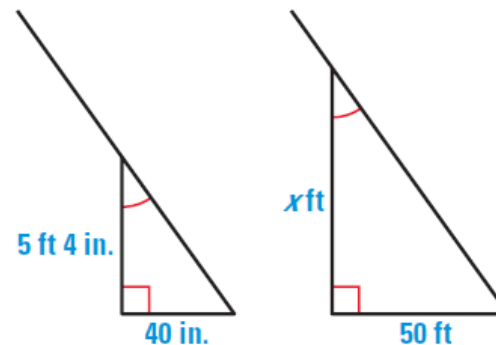
A flagpole casts a shadow that is 50 feet long. At the same time, a woman standing nearby who is five feet four inches tall casts a shadow that is 40 inches long. How tall is the flagpole to the nearest foot?



ELIMINATE CHOICES

Notice that the woman's height is greater than her shadow's length. So the flagpole must be taller than its shadow's length. Eliminate choices A and B.

- (A) 12 feet (B) 40 feet
 (C) 80 feet (D) 140 feet



You can use a proportion to find the height x . Write 5 feet 4 inches as 64 inches so that you can form two ratios of feet to inches.

Use the diagram to complete the statement.

1. $\triangle MON \sim \underline{\quad?}$

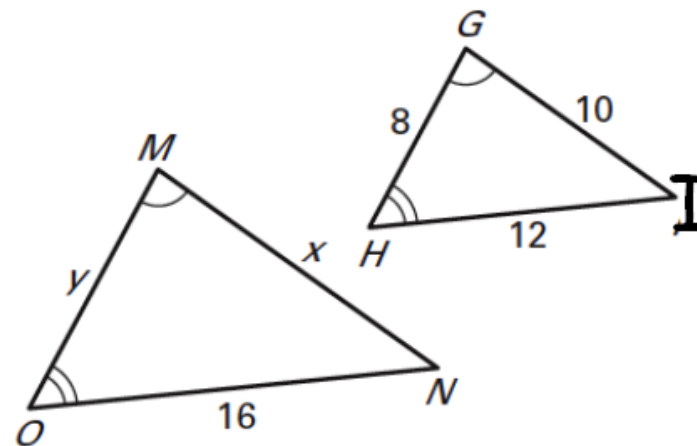
2. $\frac{MN}{?} = \frac{ON}{?} = \frac{MO}{?}$

3. $\frac{16}{12} = \frac{?}{10}$

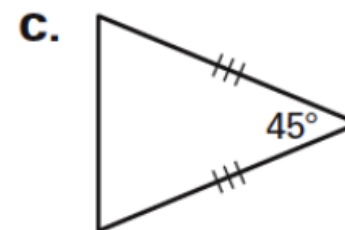
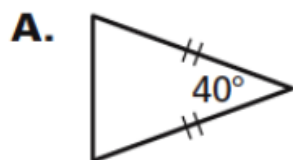
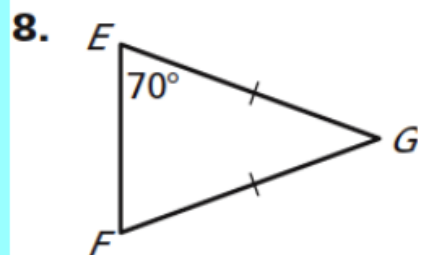
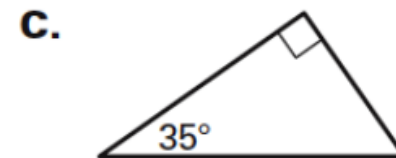
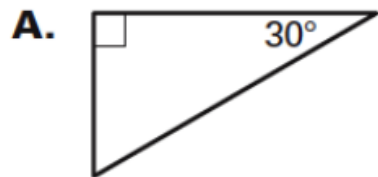
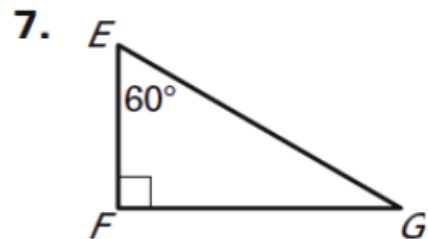
4. $\frac{12}{16} = \frac{?}{y}$

5. $x = \underline{\quad?}$

6. $y = \underline{\quad?}$

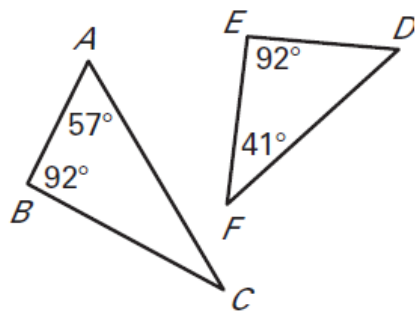


Which triangles are similar to $\triangle EFG$? Explain.

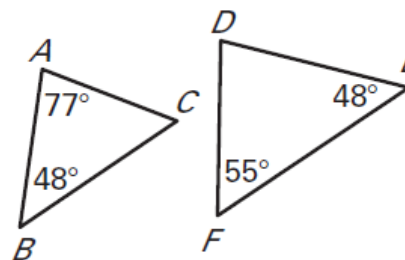


Determine whether $\triangle ABC$ and $\triangle DEF$ are *similar*, *not similar*, or *cannot be determined* from the information given in the figure.

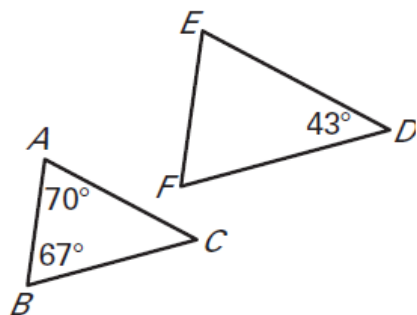
9.



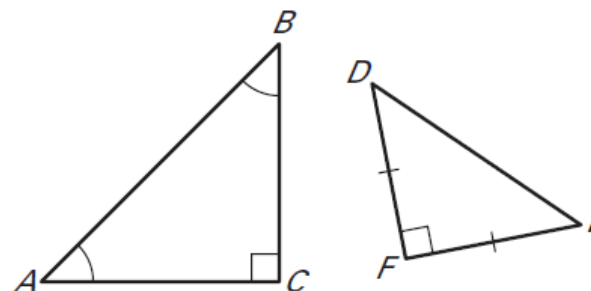
10.



11.

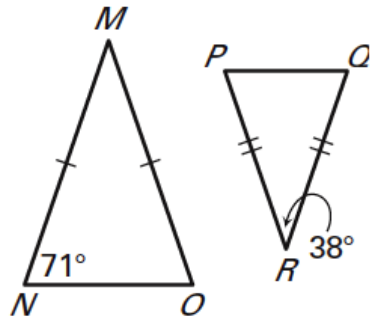


12.

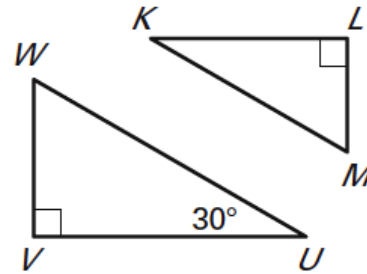


Determine whether the triangles can be proved similar. If they are similar, write a similarity statement. *Explain* your reasoning.

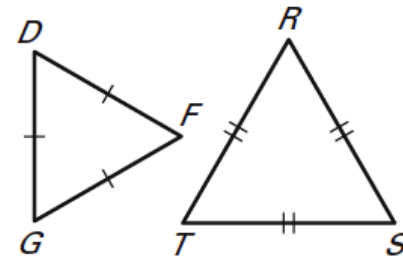
13.



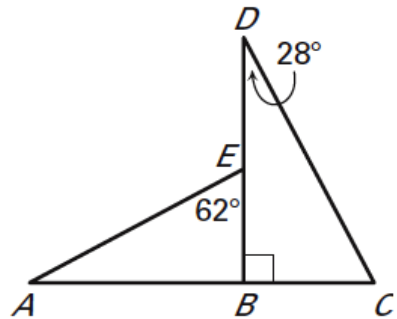
14.



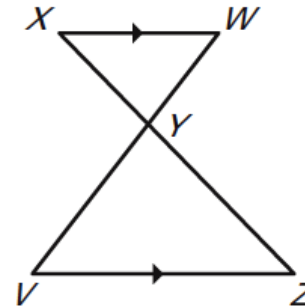
15.



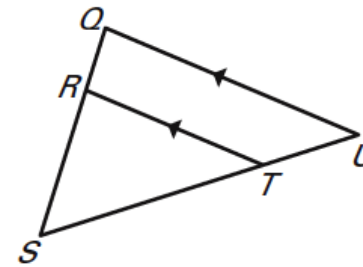
16.



17.

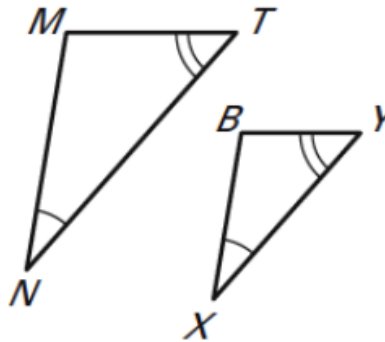


18.

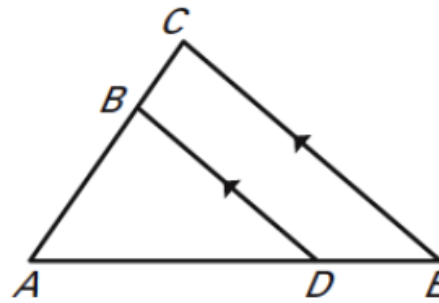


Show that the triangles are similar.

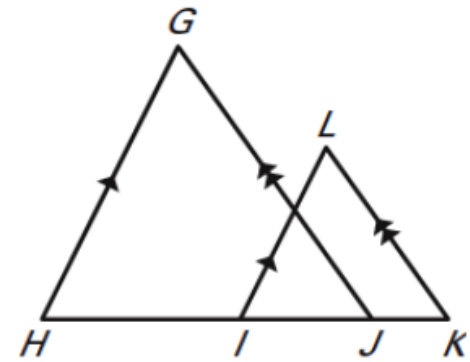
19.



20.



21.



Assignment: 5.4 Worksheet