

# Day 3: Similar Triangles

Date \_\_\_\_\_

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1) Similar Triangles are two triangles that have three congruent \_\_\_\_\_, and three \_\_\_\_\_ sides.

If the sides are proportional, then there is a \_\_\_\_\_ that multiplied the lengths of one triangle to create the second.

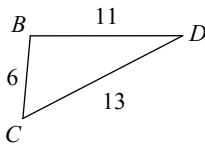
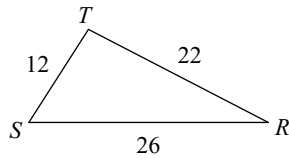
\*If the scale factor is 1, then the triangles are congruent.

When naming similar triangles, always name them in \_\_\_\_\_.

There are 3 easy ways to test for similar triangles:

**SSS Theorem:** If all three corresponding sides are \_\_\_\_\_, then the triangles are similar.

2)

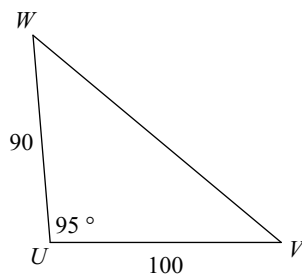
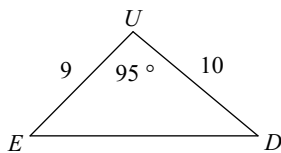


$\triangle RST \sim$  \_\_\_\_\_

**SAS Theorem:** If two corresponding sides of a triangle are \_\_\_\_\_

and the "sandwiched" angle is \_\_\_\_\_, then the triangles are similar.

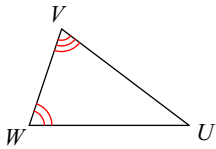
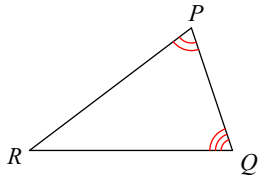
3)



$\triangle UVW \sim$  \_\_\_\_\_

**AA Theorem:** If two triangles have \_\_\_\_\_ sets of congruent, corresponding \_\_\_\_\_, then the triangles are similar.

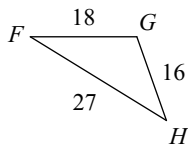
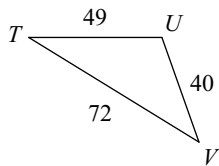
4)



$\triangle PQR \sim$  \_\_\_\_\_

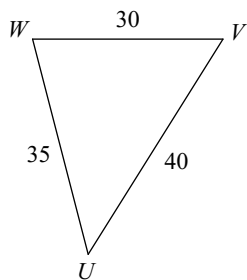
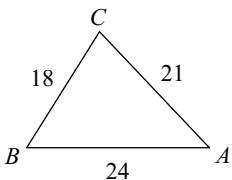
**State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.**

5)



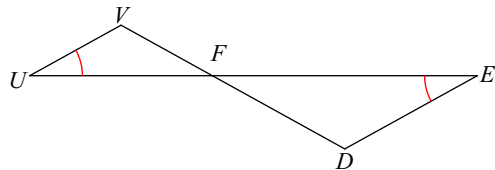
$\triangle TUV \sim$  \_\_\_\_\_

7)



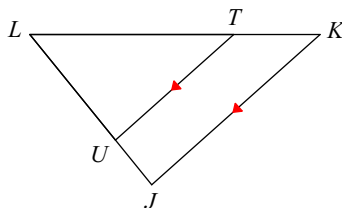
$\triangle UVW \sim$  \_\_\_\_\_

6)

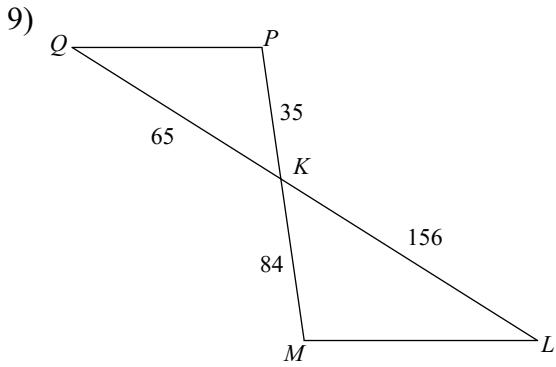


$\triangle FED \sim$  \_\_\_\_\_

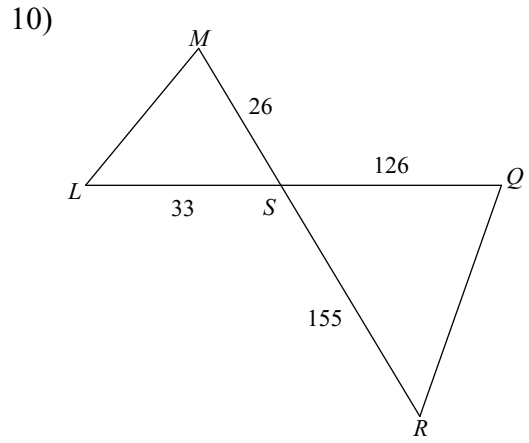
8)



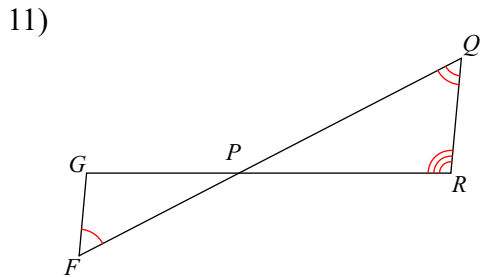
$\triangle LKJ \sim$  \_\_\_\_\_



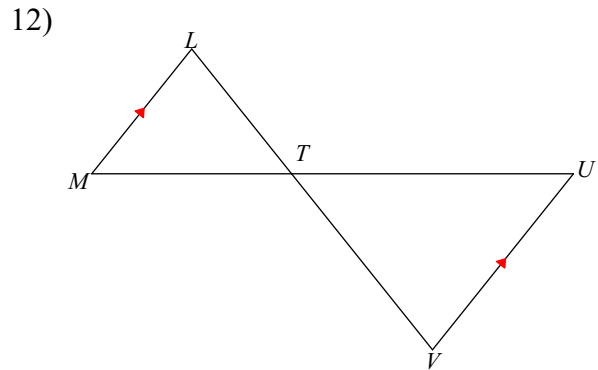
$\triangle KLM \sim$  \_\_\_\_\_



$\triangle SRQ \sim$  \_\_\_\_\_

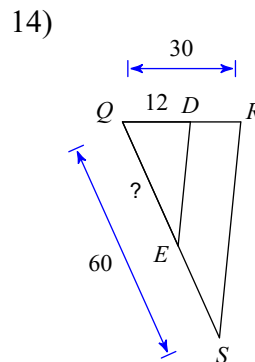
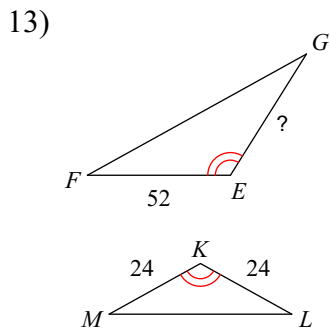


$\triangle PQR \sim$  \_\_\_\_\_

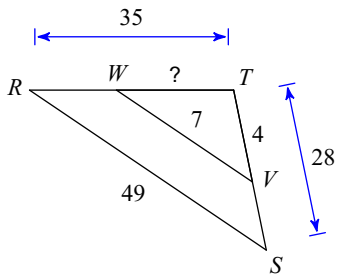


$\triangle TUV \sim$  \_\_\_\_\_

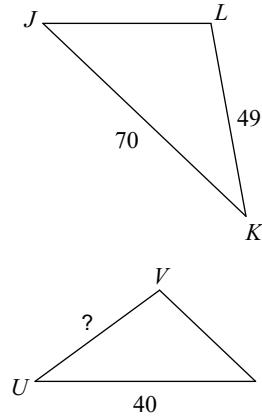
**Find the missing length. The triangles in each pair are similar.**



15)

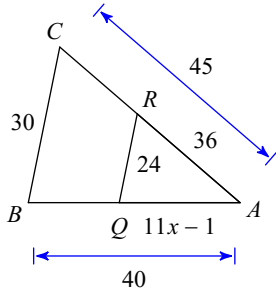


16)  $\triangle JKL \sim \triangle TUV$

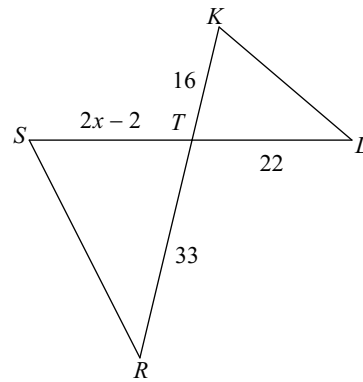


Solve for  $x$ . The triangles in each pair are similar.

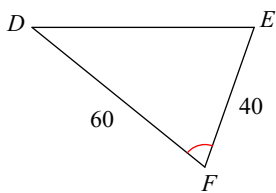
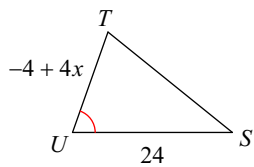
17)



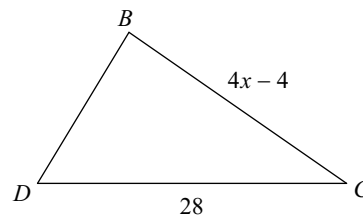
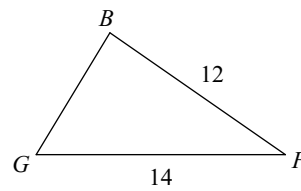
18)  $\triangle TSR \sim \triangle TKL$



19)  $\triangle FED \sim \triangle UTS$



20)



**Draw a picture of what is described, then solve the problem.**

- 21)  $\triangle GHI$  and  $\triangle JKL$  are similar triangles. The sides of  $\triangle JKL$  are 57, 98, and 140. If the shortest side of  $\triangle GHI$  is 171, what is the longest side?
- 22) To determine the height of the flagpole at school, Jacqueline, who is 5 feet tall, notices that she casts a shadow that is 6 feet long. She then measures that the shadow cast by the flagpole is 30 feet long. How tall is the flagpole?
- 23) A 40 *ft* flagpole casts a shadow that is 25 *ft* long. Find the length of a shadow cast by a nearby building that is 200 *ft* tall.
- 24)  $\triangle QRS$  and  $\triangle ZYX$  are similar triangles. The sides of  $\triangle QRS$  are 300, 365, and 450. If the smallest side of  $\triangle ZYX$  is 700, what is the longest side?