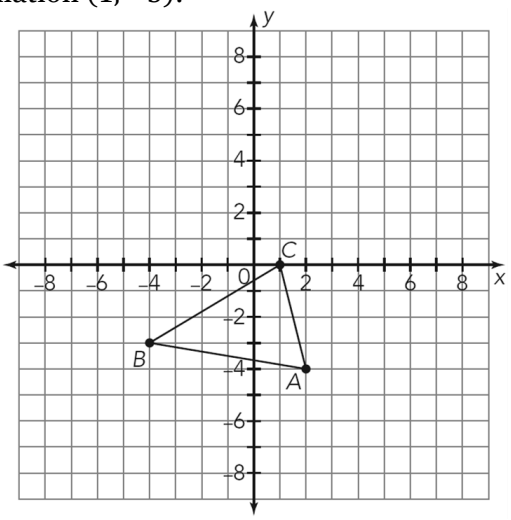
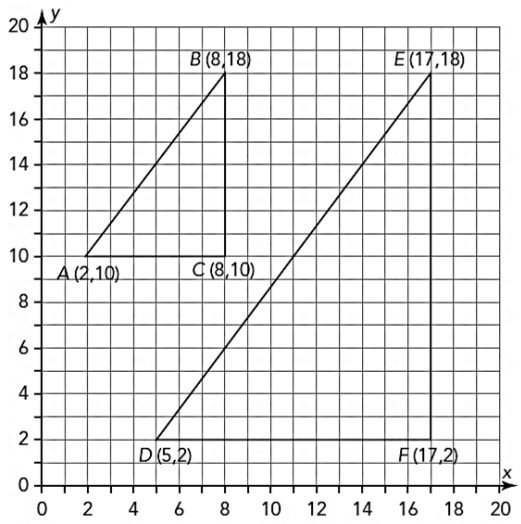
 Name: _____

4.REV.2 – End of Chapter Review

1. Graph and properly label the vertices of $\triangle ABC$ after a dilation of 2 with center of dilation $(1, -3)$.

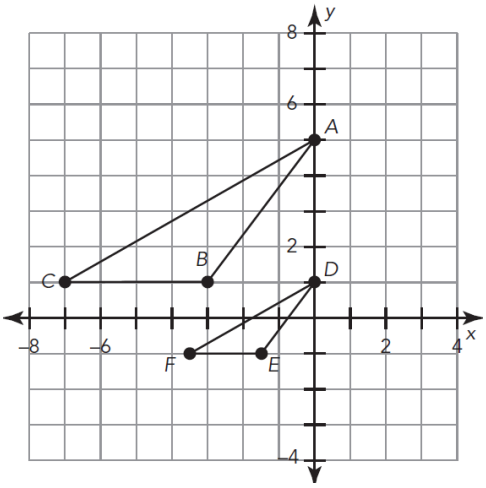


2. $\triangle DEF$ is a dilation of $\triangle ABC$. Determine the center of dilation and the scale factor.

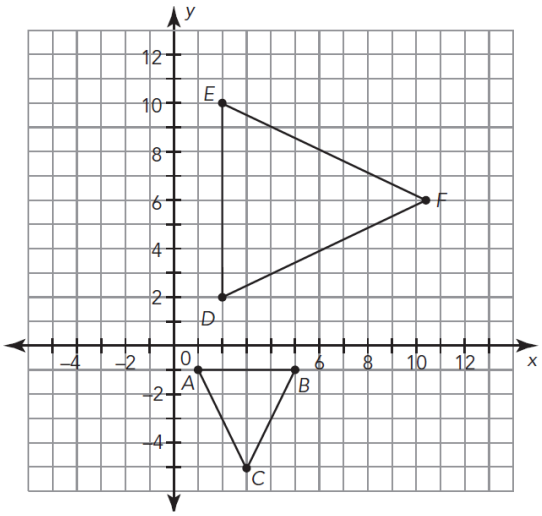


Use the definition of similarity in terms of similarity transformations to determine whether the two figures are similar. Explain your reasoning. (Assume that $\triangle ABC$ is the pre-image.)

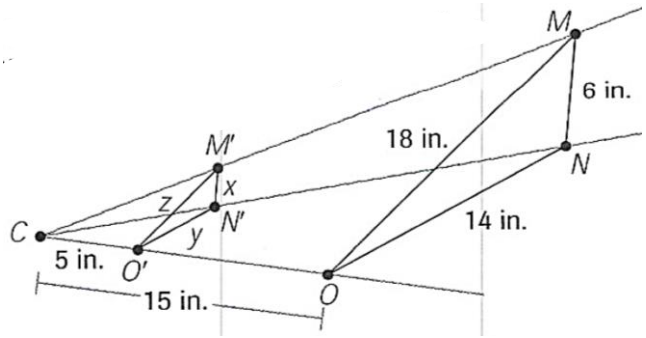
3.



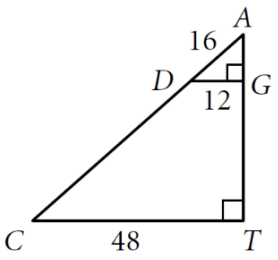
4.



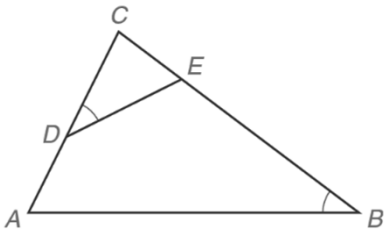
5. $\triangle MNO$ is mapped onto $\triangle M'N'O'$ by a dilation with center C. Find the scale factor and the values of x, y, and z.



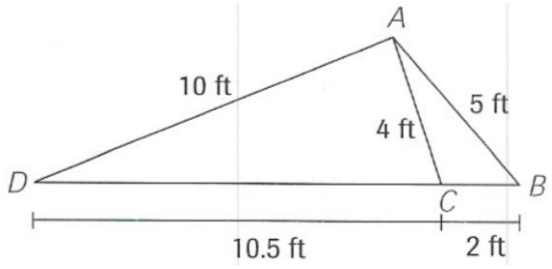
6. Given: $\triangle CAT \sim \triangle DAG$
Set up and solve a proportion to find CA.



7. Given: $\triangle CDE \sim \triangle CBA$
$CD = 10$, $DA = 8$, and $CE = 6$
Set up and solve a proportion to find EB.



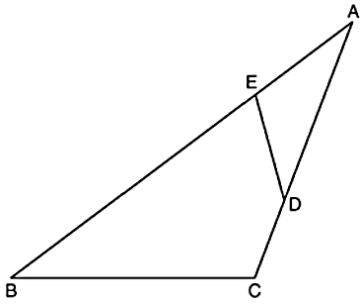
8. Is $\triangle ABD \sim \triangle CBA$? Explain why or why not.



9. In $\triangle ABC$ and $\triangle DEF$, $AB = 4$, $AC = 5$, $DE = 8$, $DF = 10$, and $\angle A \cong \angle D$. Which similarity theorem could be used to prove the triangles are similar? *Hint: Sketch and label the two triangles.*

Determine whether the triangles shown are similar and explain your reasoning. If the triangles are similar, identify the similarity theorem – AA, SSS, or SAS – and complete the similarity statement.

10. Given: $\angle ACB \cong \angle AED$



Explain your reasoning:

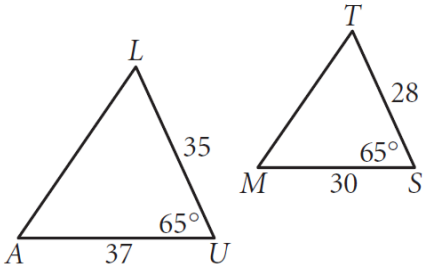
Similar? Yes No

Similarity Theorem:

AA SSS SAS

$\triangle ABC \sim$ _____

11.



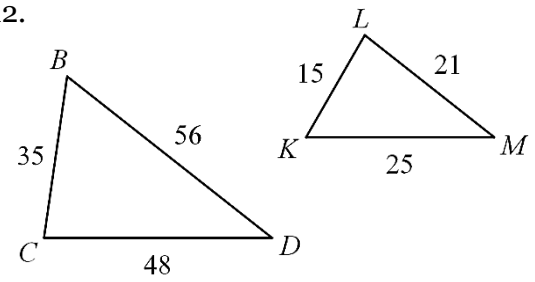
Explain your reasoning:

Similar? Yes No

Similarity Theorem:

AA SSS SAS

$\triangle AUL \sim$ _____

12. 

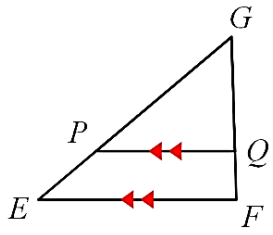
Explain your reasoning:

Similar? Yes No

Similarity Theorem:

AA SSS SAS

$\triangle KLM \sim$ _____

13. 

Explain your reasoning:

Similar? Yes No

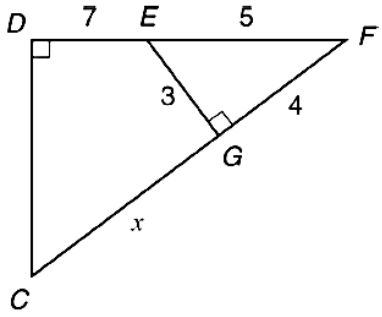
Similarity Theorem:

AA SSS SAS

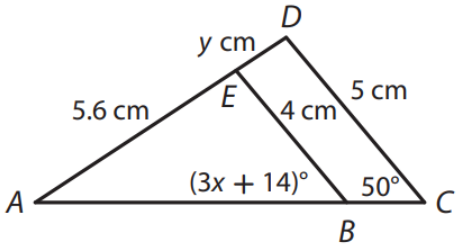
$\triangle EFG \sim$ _____

The triangles shown are similar. Set up and solve a proportion/equation to find the value of the variables.

14. $\triangle CDF \sim \triangle EGF$

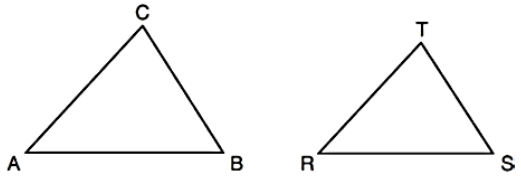


15. $\triangle ABE \sim \triangle ACD$



16. Two triangles are similar. The lengths of the sides of the smaller triangle are 3, 5, and 6, and the length of the longest side of the larger triangle is 18.
    a. What is the perimeter of the larger triangle?
    b. What is the ratio of their areas?

17. In the diagram below, $\triangle ABC \sim \triangle RST$.



Which statement is not true?

a) $\angle A \cong \angle R$

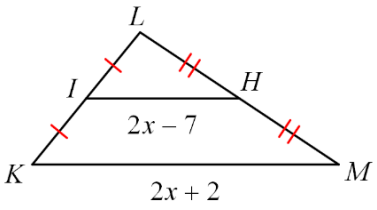
b) $\frac{AB}{RS} = \frac{BC}{ST}$

c) $\frac{AB}{BC} = \frac{ST}{RS}$

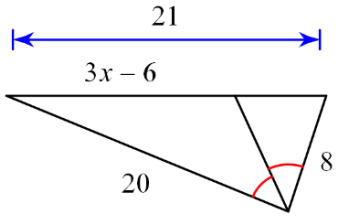
d) $\frac{AB + BC + AC}{RS + ST + RT} = \frac{AB}{RS}$

Set up a proportion/equation & solve for x.

18.



19.



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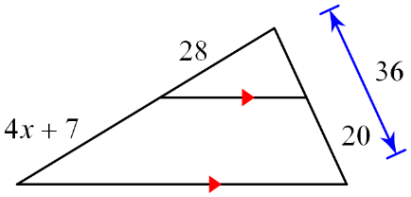
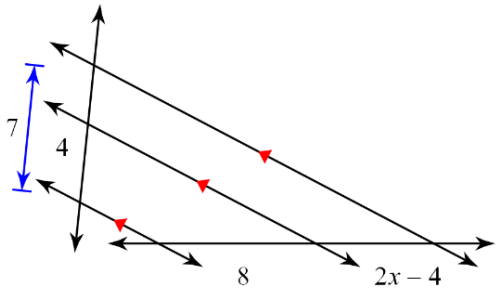


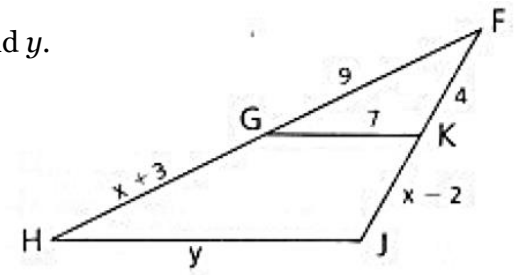
21.



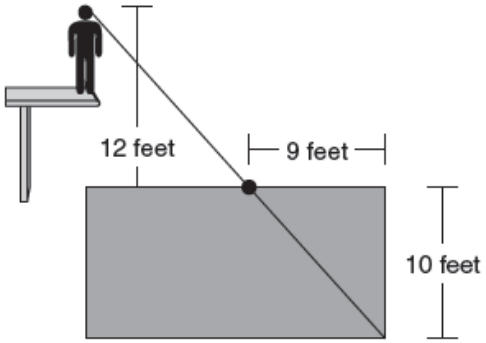
22. Given: $\overleftrightarrow{GK} \parallel \overleftrightarrow{HJ}$ & the lengths shown

a. Set up and solve proportions to find the values of x and y.

b. Is $\overline{GK}$ a midsegment? Explain your reasoning.



23. Carly looks from the top of a diving board and lines up a ball floating on the surface of the water with the bottom of the opposite corner of the pool. Find the total distance across the surface of the pool.



24. To measure the height of a tree, *C*ynthia has her brother, *BR*ian, stand so that the tip of his shadow coincides with the tip of the tree's shadow, at point *C*. *BR*ian, who is 1.2 meters tall is 4.2 meters from *C*ynthia & 6.5 meters from the base of the tree.

Use similar triangles to set up and solve a proportion to find the height of the tree to the nearest tenth of a meter.