Name: _____

4.REV.2 – END OF CHAPTER REVIEW

Past due on: _____ Period: _____
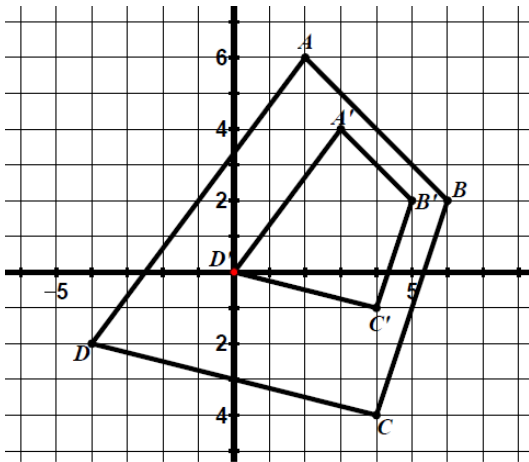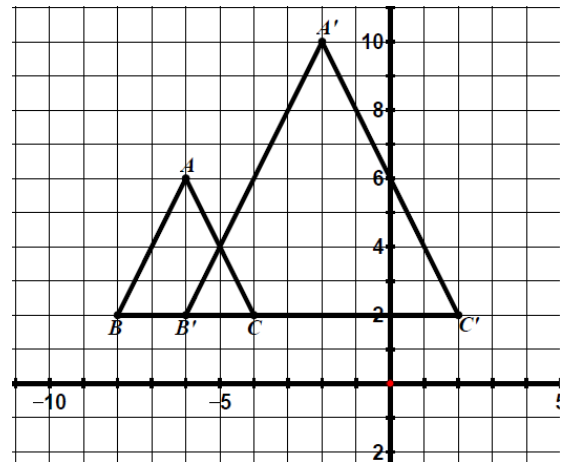
In the following problems, one figure has been dilated to obtain the new figure. Determine the scale factor AND the center of dilation.
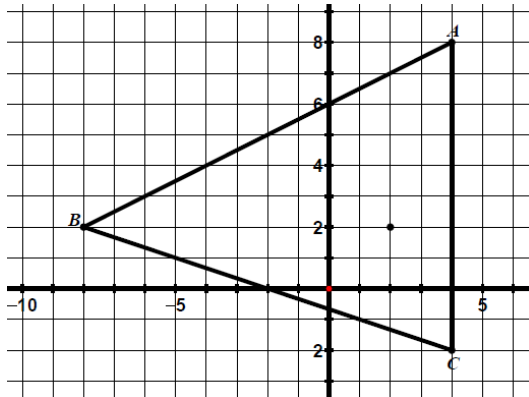
1. Scale factor: _____; center: _____
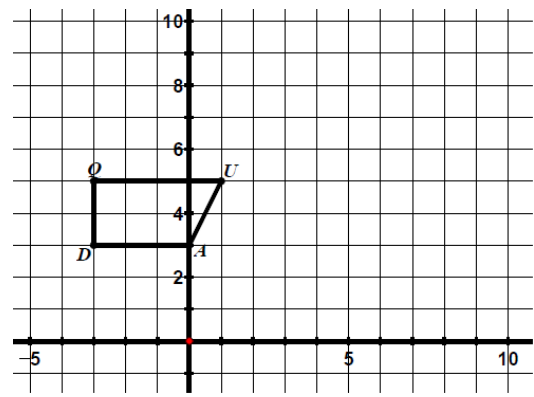

2. Scale factor: _____; center: _____

Graph and properly label the vertices of the image of each figure after a dilation with the given center and scale factor.

3. $k = \frac{1}{2}$; center of dilation: $(2, 2)$
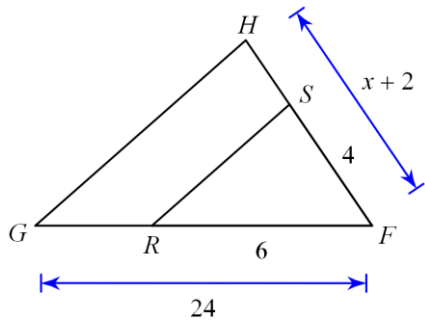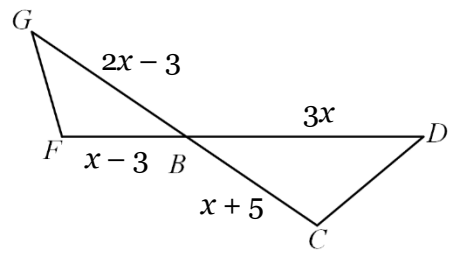

4. $k = 3$; center of dilation: $(-3, 3)$

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

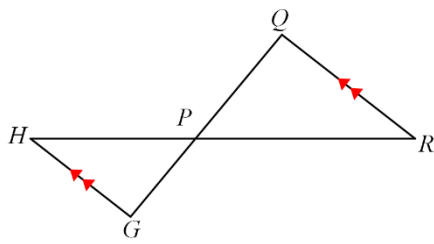5. $\triangle GHF \sim \triangle RSF$

6. $\triangle GBF \sim \triangle DBC$

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.
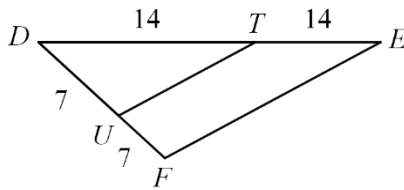
7.

Explain your reasoning:

Similar? Yes No

Similarity Theorem:

AA   SSS   SAS

$\triangle HGP \sim$ _____

8.

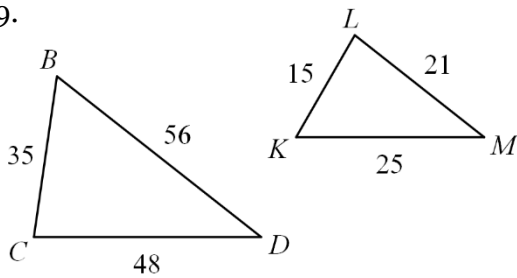

Explain your reasoning:

Similar? Yes No

Similarity Theorem:

AA   SSS   SAS

$\triangle DUT \sim$ _____

9.

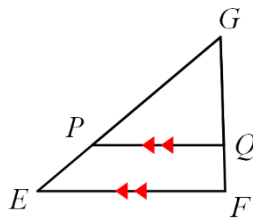Explain your reasoning:

Similar? Yes No

Similarity Theorem:

AA   SSS   SAS

$\triangle KLM \sim$ _____

10.

Explain your reasoning:

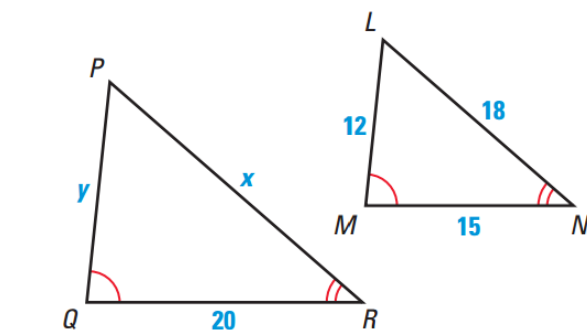Similar? Yes No

Similarity Theorem:

AA   SSS   SAS

$\triangle EFG \sim$ _____

The triangles shown are similar: $\triangle PQR \sim \triangle LMN$, where $\triangle PQR$ is the pre-image. Find the following:

11. Scale factor (expressed as a fraction in simplest form)


12. *PR*

13. *PQ*

14. What is the ratio of the perimeters?

15. What is the ratio of the areas?

Chapter 4: Similarity

16. Your friend claims that $\triangle JKL \sim \triangle MNO$ by the SAS Similarity Theorem when $JK = 18$, $m\angle K = 130°$, $KL = 16$, $MN = 9$, $m\angle N = 65°$, and $NO = 8$. Do you support your friend's claim? Explain your reasoning.

Use the appropriate theorem – Angle Bisector/Proportional Sides Theorem, Proportional Segments Theorem, Triangle Proportionality Theorem, or Midsegment Theorem – to set up a proportion (or equation) & solve for x.
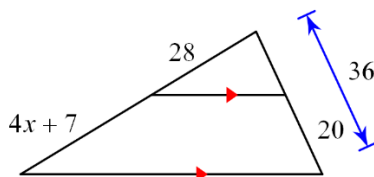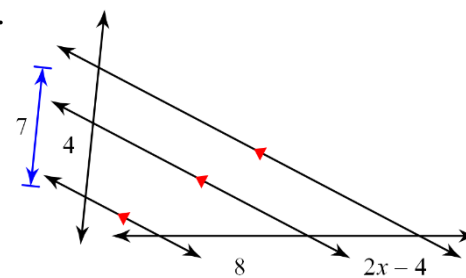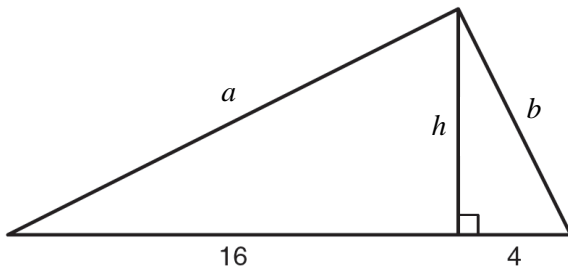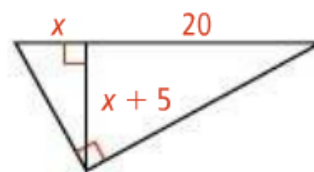
17.
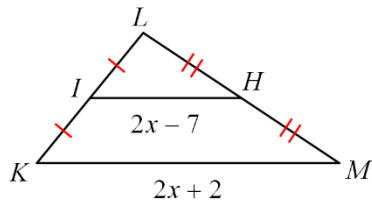
18.
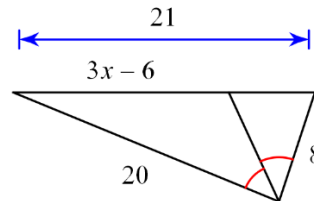
19.

20.

Use similar right triangle relationships to find the value of the variables. If necessary, give the answer in simplest radical form.

21.

22.

23. Figure A has a perimeter of 72 meters and one of the side lengths is 18 meters. Figure B has a perimeter of 120 meters. Set up and solve a proportion to find the missing corresponding side length.

24. Figure A has an area of 18 square feet. Figure B has an area of 98 square feet and one of the side lengths is 14 feet. Set up and solve a proportion to find the missing corresponding side length.

25. 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.

    Use similar triangles to set up and solve a proportion to find the value of x.

    Then calculate the total distance across the surface of the pool.
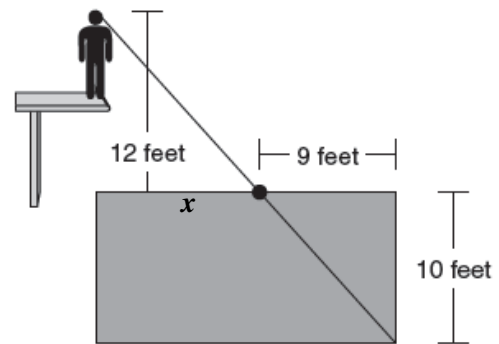
26. To measure the height of a tree, *C*ynthia has her little brother, *BR*ian, stand so that the tip of his shadow coincides with the tip of the tree's shadow, at point *C*. *BR*ian, who is 1.2 meters tall is 4.2 meters from *C*ynthia, and 6.5 meters from the base of the tree.

    Use similar triangles to set up and solve a proportion to find the height of the tree to the nearest tenth of a meter.
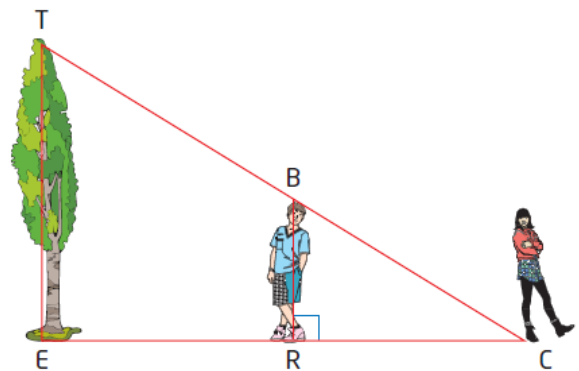
27. Certain sections of stained glass are sold in triangular pieces. Which of the three beveled pieces (shown), if any, are similar? Explain your reasoning.

Chapter 4: Similarity