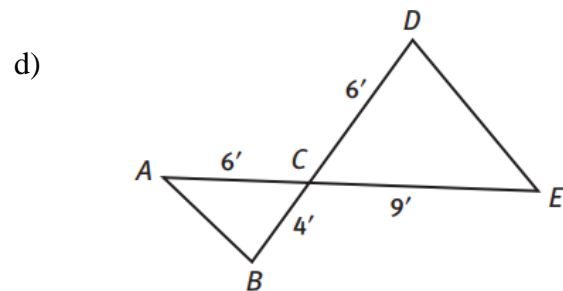
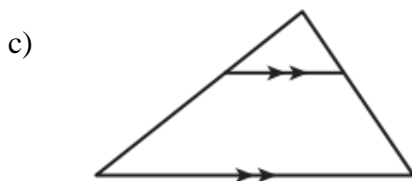
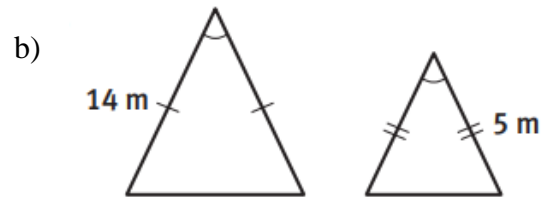
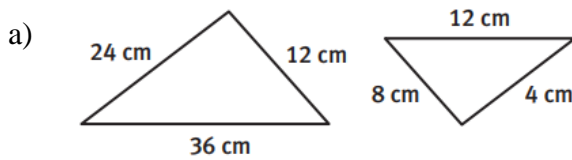


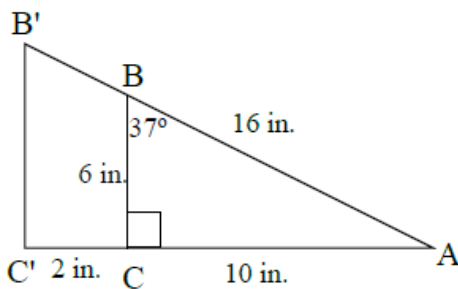
Unit 3 Topics:

- Activity 17 - Dilations and Similarity Transformations
 - Perform Dilations on and off the coordinate plane.
 - Describe dilations.
 - Understand the meaning of similarity transformations.
 - Use similarity transformations to determine whether the figures are similar.
 - Identify properties of similar figures.
 - Apply properties of similar figures.
- Activity 18 – Similar Triangles
 - AA~, SSS~, SAS~
 - Show triangles are similar.
 - Use similar triangles to solve problems.

1. For each pair of triangles, write which similarity criterion, if any, can be used to show the triangles are similar.



2. \overline{BC} is dilated at center A to $\overline{B'C'}$. Use the following diagram to find the measures and answer the question. Use the following diagram to answer the following.

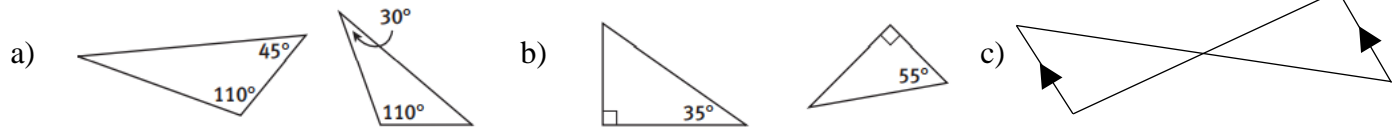


a) $\overline{B'C'}$ = _____

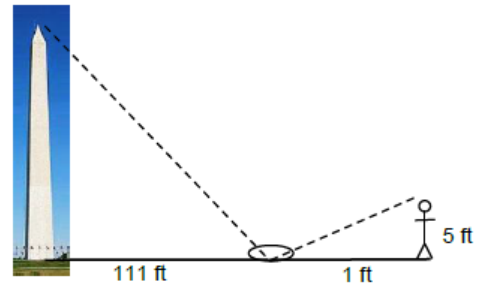
b) What is the scale factor of \overline{BC} to $\overline{B'C'}$?

3. On a map, 2 inches represents 35 miles. Two towns are measured to be 5 inches apart on the map. About how many miles apart are the two towns? Round to the nearest hundredth, if necessary.

4. Write whether AA similarity can be used to show that the pair of triangles are similar. Explain your answer.



5. Julio was on vacation in Washington D.C. with his family and placed a mirror on the ground 111 feet from the Washington Monument. Julio then walked backwards until he was able to see the top of the monument in the mirror. His eyes are about 5 feet above the ground and he is 1 foot from the mirror. Using similar triangles, find the height of the Washington Monument.



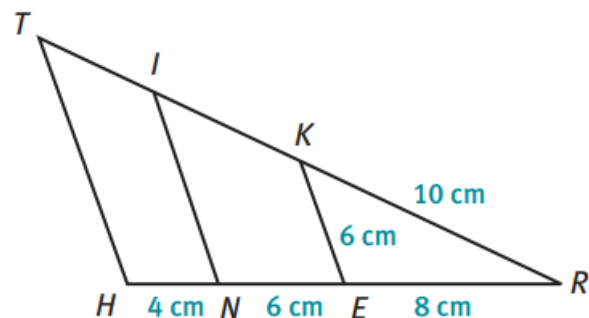
6. Given the diagram with $\overline{TH} \parallel \overline{IN} \parallel \overline{KE}$ and segment measures as shown.

a) Find the length of \overline{IK} .

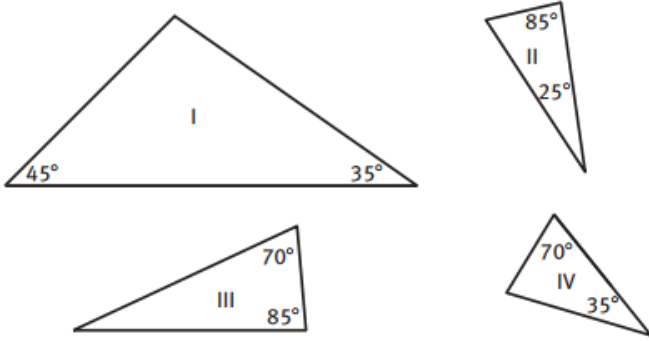
b) Find the length of \overline{IN} .

c) Find the length of \overline{IT} .

d) Find the length of \overline{TH} .



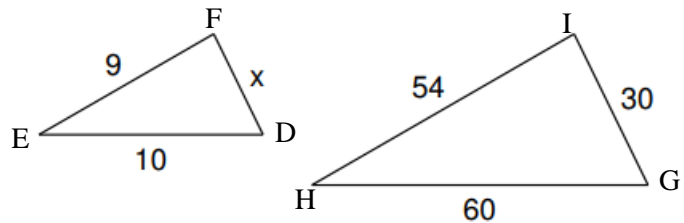
7. Consider the triangles shown. List the pairs of triangles that can be proved similar by the Angle-Angle Similarity Postulate.



8. If $\triangle QRS$ is similar to $\triangle TUV$, $m\angle Q = 60^\circ$, $m\angle R = 24^\circ$, what is the $m\angle V$?

9. $\triangle DEF \sim \triangle GHI$ with the given side lengths.

a. Classify the dilation from $\triangle DEF \rightarrow \triangle GHI$



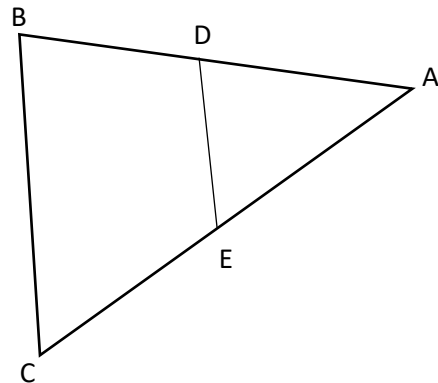
b. State the scale factor from $\triangle DEF \rightarrow \triangle GHI$

c. Find x .

10. DE is parallel to BC . If $AD = 5$, $DE = 8$, $AE = 6$, $CE = 10$. Find BD and BC .

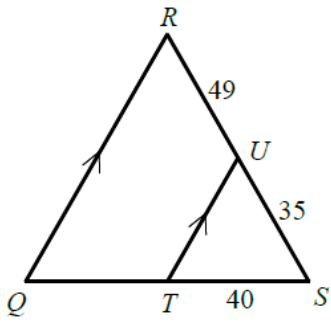
$BD =$ _____

$BC =$ _____



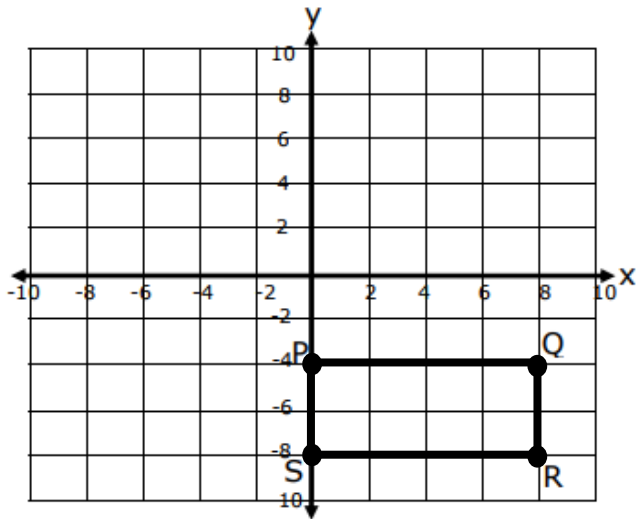
11. Given Quadrilateral $TUVW$ is dilated by a scale factor of 3.5 with angle measures of $m\angle T = 40^\circ$, $m\angle U = 110^\circ$, $m\angle V = 130^\circ$, $m\angle W = 80^\circ$. What is $m\angle Q$ and $m\angle S$ in quadrilateral $PQRS$? How do you know this (explain)?

12. In $\triangle QRS$, $\overline{QR} \parallel \overline{TU}$. Find the length of \overline{TQ} .

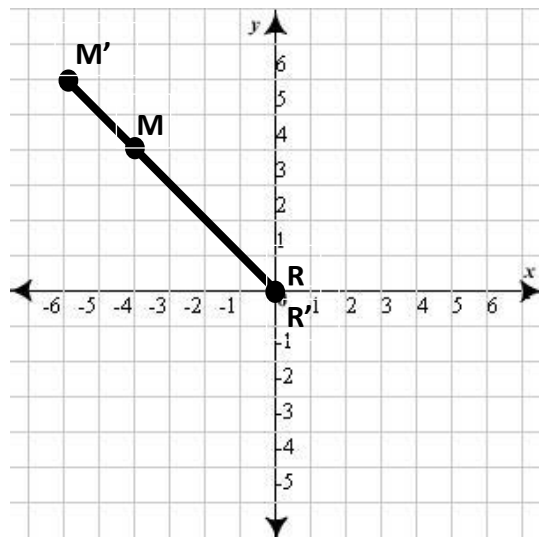


13. A given blueprint for a rectangular garden has a length of 12 inches and a width of 3.5 inches. The actual garden is 10 feet long. What is the width of the garden?

14. Graph the image of rectangle PQRS as a result of $D_{0, \frac{1}{4}}$.

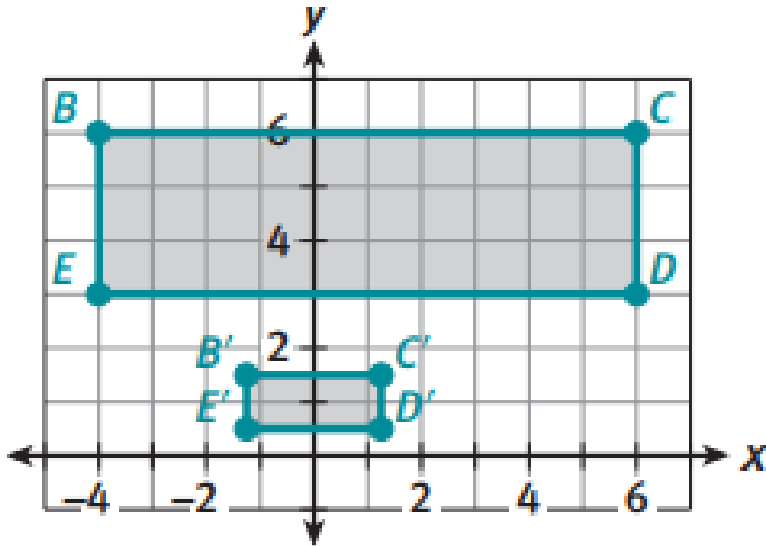


15. \overline{RM} was dilated to form its image $\overline{R'M'}$. What is the scale factor and center of dilation?



16. Consider \overline{UB} with endpoints $U(-3, 9)$ and $B(6, -9)$ and $\overline{U'B'}$ with endpoints $U'(-1, 3)$ and $B'(2, -3)$. Describe the dilation that was applied to \overline{UB} by stating the scale factor and center of dilation.

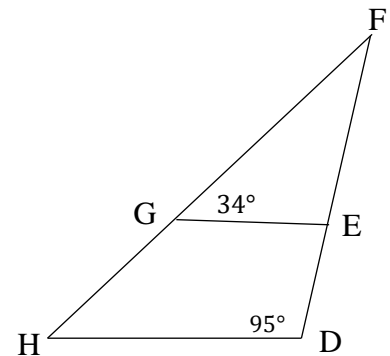
17. Rectangle BCDE is mapped onto Rectangle $B'C'D'E'$ by a dilation. What is the scale factor? Express this dilation as a function.



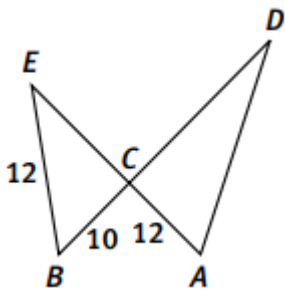
Scale factor: _____

Function: _____

18. Which additional angle's measure, by itself, could be used to conclude that $\triangle EFG \sim \triangle DFH$?



19. Jorge found DA by writing and solving the proportion shown, but he is incorrect. Write the correct proportion and solve for DA .

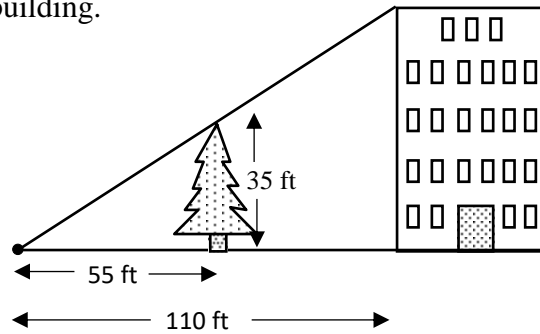


$$\frac{10}{12} = \frac{12}{DA}$$

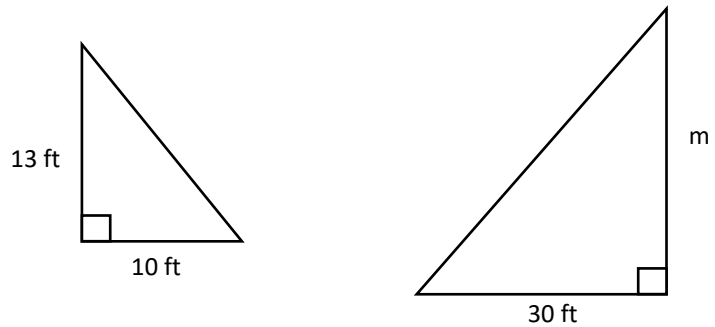
$$10 \cdot DA = 12 \cdot 12$$

$$DA = 14.4$$

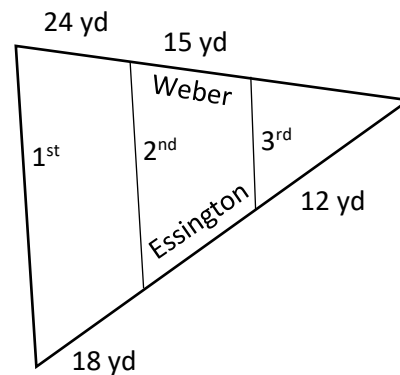
20. The tree that is 35ft tall casts a shadow that is 55ft long.
The building casts 110ft shadow. Find the height of the building.



21. The right triangles shown are similar. What is the approximate value of m ?



22. 1st, 2nd, and 3rd street all run parallel to each other. They are crossed by Essington and Weber. To the nearest hundredths of a yard, what is the length of Essington Street between 2nd and 3rd Street?



23. Given $\triangle ABC$ on the coordinate plane to the right, complete the transformation $D_{O,3}$ on $\triangle ABC$.

Graph $\triangle A'B'C'$

