

Similarity

Topic: Dilations

Things to Remember:

- ✓ Dilations needs TWO components: scale factor (k) and a center of dilation
- ✓ $K =$ scale factor
- ✓ $K > 1 \rightarrow$ Enlargement
- ✓ $K < 1 \rightarrow$ Reduction
- ✓ $K = 1 \rightarrow$ Congruence

Examples:

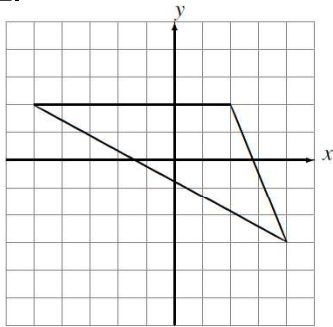
1. Describe what type of dilation would occur with each k-value and **WHY**.

a. $k = \frac{3}{4}$

c. $k = \frac{8}{7}$

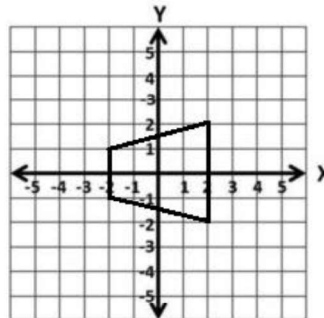
d. $k = 0.99998$

2.



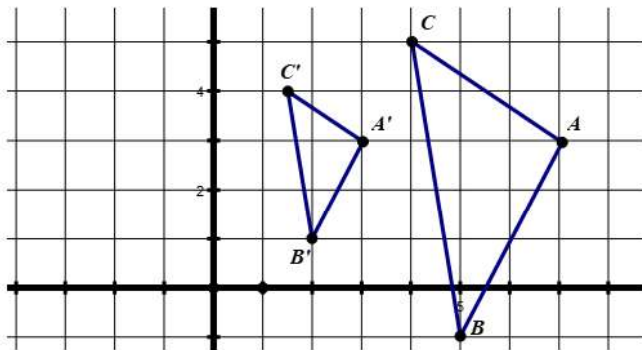
- a. Label the vertices ABC.
- b. Dilate with $k = 1/2$ centered at the origin.
- c. What type of dilation occurred?

3.



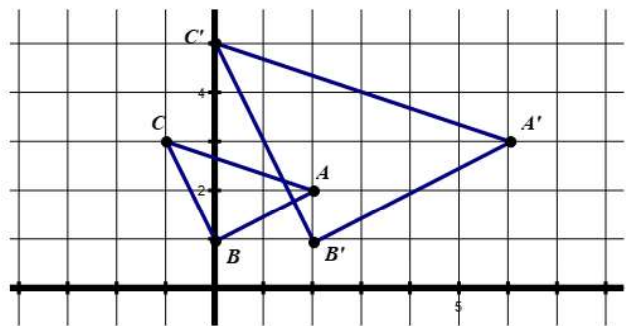
- a. Label the vertices ABCD.
- b. Dilate with $k = 2$ centered at the origin.
- c. What type of dilation occurred?

4.



- a. Find the center of dilation.
- b. Calculate the scale factor.

5.



- a. Find the center of dilation.
- b. Calculate the scale factor.

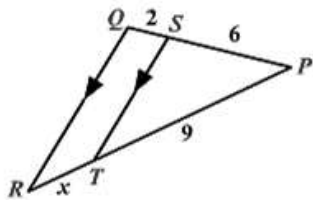
Topic: Triangle Proportionality

Things to Remember:

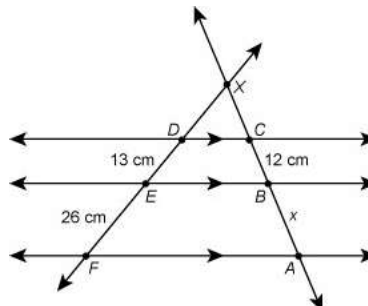
- ✓ $\frac{\text{top}}{\text{bottom}} = \frac{\text{top}}{\text{bottom}}$ OR ANYWAY THAT KEEPS THE SAME ORDER!!
- ✓ ONLY WHEN TWO SIDES ARE PARALLEL

Examples

5. Solve for x .

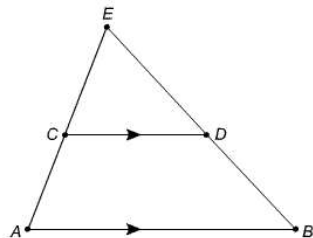


6. Solve for x

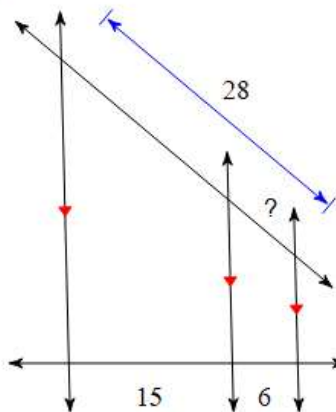


7. $AE = 16$, $CA = 6$, and $ED = 15$

Solve for EB .

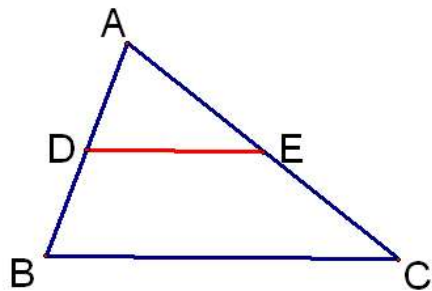


8. Solve for the missing length



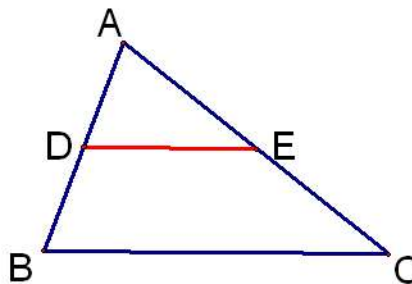
9. Determine if \overline{DE} is parallel to \overline{BC}

$AD = 5$, $DB = 15$, $AE = 3$, and $EC = 9$



10. Determine if \overline{DE} is parallel to \overline{BC}

$AD = 2$, $DB = 13$, $AE = 4$, and $EC = 8$

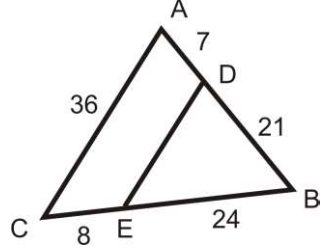


Topic: Similar Figures

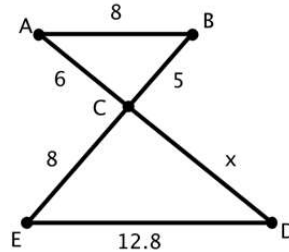
Things to Remember:

- ✓ ALL angles are congruent
- ✓ ALL sides are proportional (have the same scale factor)
- ✓ There are ONLY 3 ways to prove two triangles are similar: SSS Similarity, SAS Similarity, and AA Similarity

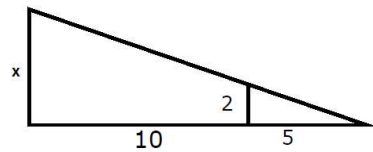
11. Given $\triangle EBD \sim \triangle CBA$
Solve for ED .



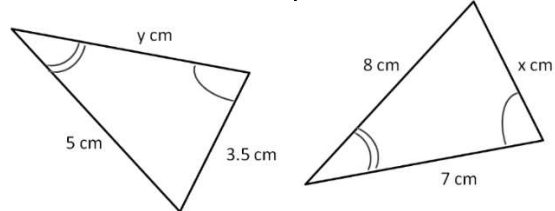
12. Given $\triangle EDC \sim \triangle BAC$
Solve for x .



13. Solve for x if the large triangle is similar to the smaller triangle.



14. Solve for x and y .



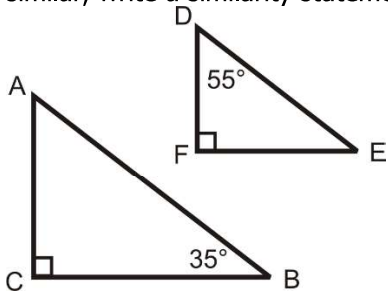
15. A telephone pole is 10 meters tall casts a shadow 8 meters long. A tree nearby casts a shadow 14 meters long. How tall is the tree?

16. A map has a scale of 3 cm : 18 miles. If Marietta and Kennesaw are 7.5 miles apart, how many centimeters are the two cities apart on the map?

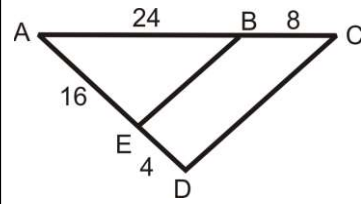
17. The area of an old picture is 24.5 in^2 . If you want to enlarge the picture 3 times, what would the area be of the new picture?

18. Triangles IJK and TUV are similar. The length of the sides of IJK are 40, 50, and 24. The length of the longest side of TUV is 275, what is the perimeter of TUV?

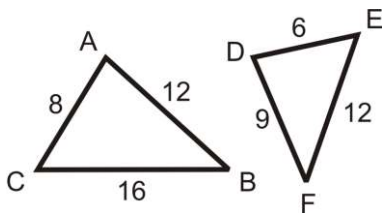
19. Determine if the triangles are similar. If the figures are similar, write a similarity statement.



20. Determine if the triangles are similar. If the figures are similar, write a similarity statement.



21. Determine if the triangles are similar. If the figures are similar, write a similarity statement.



22. Determine if the triangles are similar. If the figures are similar, write a similarity statement.

