

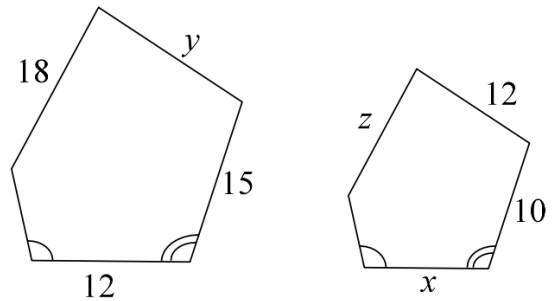
Similarity

Two similar polygons are shown. Find the missing values. Show the proportions.

1. $x =$ _____

$y =$ _____

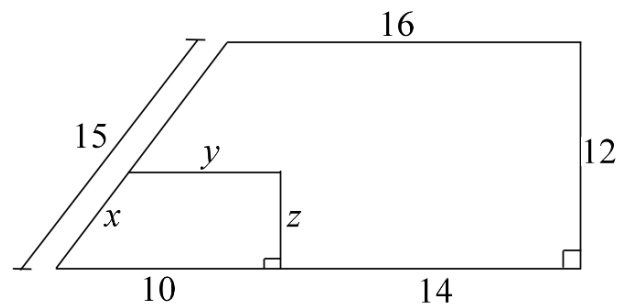
$z =$ _____



2. $x =$ _____

$y =$ _____

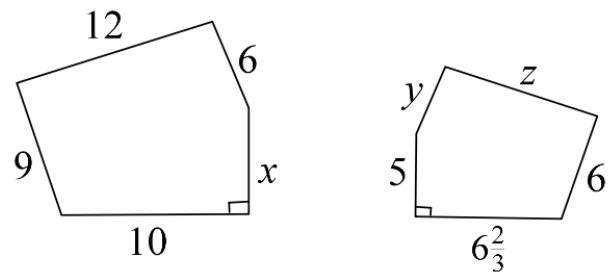
$z =$ _____



3. $x =$ _____

$y =$ _____

$z =$ _____



4. $\triangle ABC \sim \triangle DEF$ Their scale factor is 7:9. If the perimeter of $\triangle ABC$ is 42, then the perimeter of $\triangle DEF =$ _____

5. Quadrilateral $PQRS \sim$ Quadrilateral $TUVW$. One side of $PQRS$ has length 12. The corresponding side of $TUVW$ has length 15. The perimeter of $TUVW$ is 35. What is the perimeter of $PQRS$?

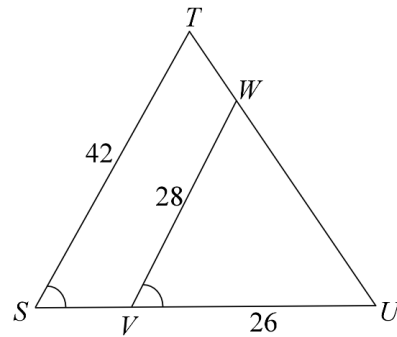
6. Solve for x : $\frac{x+4}{12} = \frac{12}{x+11}$

7. A model airplane has a wingspan of 15 inches. The actual airplane has a wingspan of 30 feet and a length of 42 feet. How long is the model?

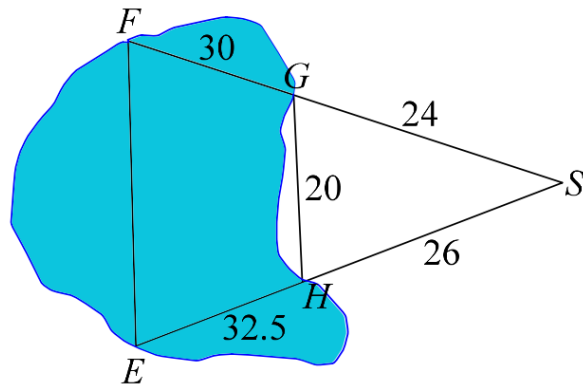
8. A 6 ft tall tent standing next to a cardboard box casts a 9 ft shadow. If the cardboard box casts a shadow that is 6 ft long then how tall is it?
9. A map has a scale of 3 cm : 18 km. If Riverside and Smithville are 54 km apart then they are how far apart on the map?
10. A model house is 12 cm wide. If it was built with a scale of 3 cm : 4 m then how wide is the real house?

11. Which similarity could be used to show the triangles are similar? AA, SSS, or SAS?

Find the length of side US .



12. To measure the distance EF across the lake, a surveyor at S locates points E , F , G , and H as shown. What is EF ?



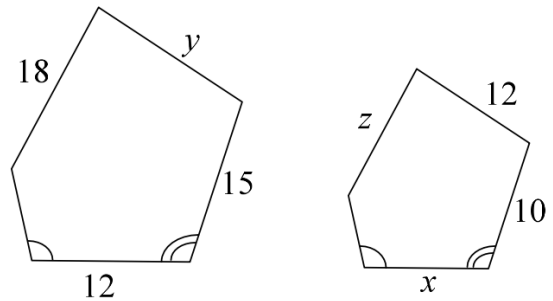
Similarity – Answer Key

Two similar polygons are shown. Find the missing values. Show the proportions.

1. $x = 8$ $\frac{3}{2} = \frac{12}{x}$ Similarity Ratio: $\frac{15}{10} = \frac{3}{2}$

$y = 18$ $\frac{3}{2} = \frac{y}{12}$

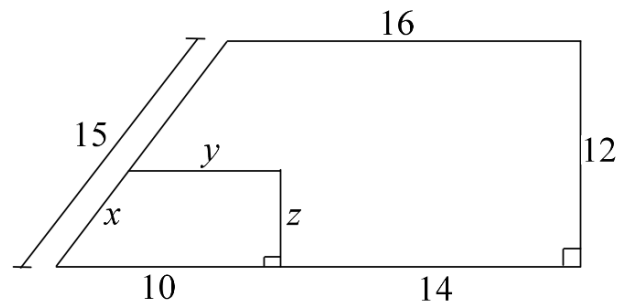
$z = 12$ $\frac{3}{2} = \frac{18}{z}$



2. $x = 6\frac{1}{4}$ $\frac{5}{12} = \frac{x}{15}$ Similarity Ratio: $\frac{10}{24} = \frac{5}{12}$

$y = 6\frac{2}{3}$ $\frac{5}{12} = \frac{y}{16}$

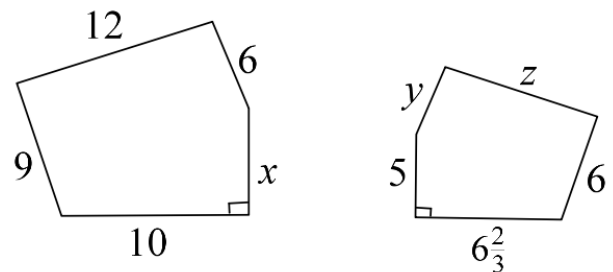
$z = 5$ $\frac{5}{12} = \frac{z}{12}$



3. $x = 7\frac{1}{2}$ $\frac{3}{2} = \frac{x}{5}$ Similarity Ratio: $\frac{9}{6} = \frac{3}{2}$

$y = 4$ $\frac{3}{2} = \frac{6}{y}$

$z = 8$ $\frac{3}{2} = \frac{12}{z}$



4. $\triangle ABC \sim \triangle DEF$ Their scale factor is 7:9. If the perimeter of $\triangle ABC$ is 42, then the perimeter of $\triangle DEF = 54$

5. Quadrilateral $PQRS \sim$ Quadrilateral $TUVW$. One side of $PQRS$ has length 12. The corresponding side of $TUVW$ has length 15. The perimeter of $TUVW$ is 35. What is the perimeter of $PQRS$?

28

6. Solve for x : $\frac{x+4}{12} = \frac{12}{x+11}$ $x = -20, 5$

7. A model airplane has a wingspan of 15 inches. The actual airplane has a wingspan of 30 feet and a length of 42 feet. How long is the model? **21 feet**

8. A 6 ft tall tent standing next to a cardboard box casts a 9 ft shadow. If the cardboard box casts a shadow that is 6 ft long then how tall is it?

4 ft

9. A map has a scale of 3 cm : 18 km. If Riverside and Smithville are 54 km apart then they are how far apart on the map?

9 cm

10. A model house is 12 cm wide. If it was built with a scale of 3 cm : 4 m then how wide is the real house?

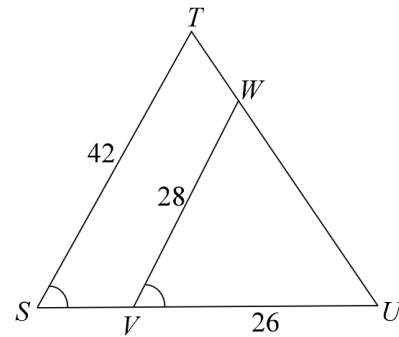
16 m

11. Which similarity could be used to show the triangles are similar? AA, SSS, or SAS?

AA

Find the length of side US .

$US = 39$



12. To measure the distance EF across the lake, a surveyor at S locates points E , F , G , and H as shown. What is EF ?

$EF = 45$

