

6.1 Similar Figures

NOTES

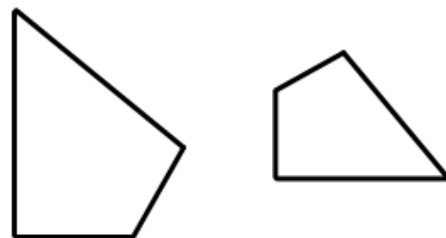
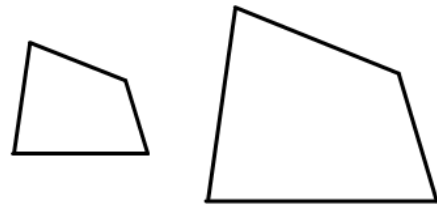
Write your questions here!



Similar Figures –

Similar Polygons		
Definition Two polygons are similar polygons if corresponding angles are	Picture <i>SIMA ~ LURE</i>	Symbols

Corresponding Parts!

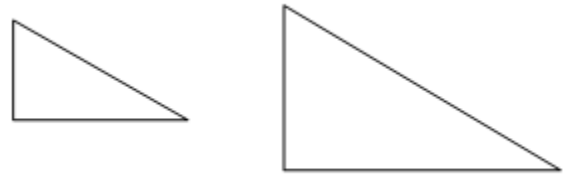
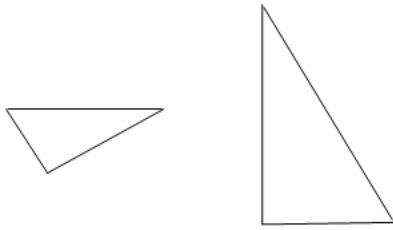


Scale Factor =

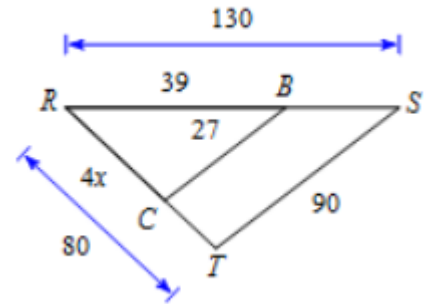
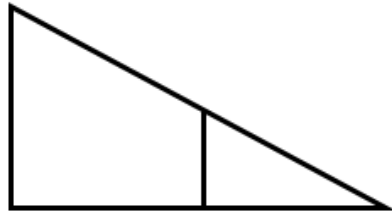
Write your questions here!



Find x !



Overlapping Triangles!



Summarize your notes!

6.1 PRACTICE

Draw the following. Mark the congruent angles!

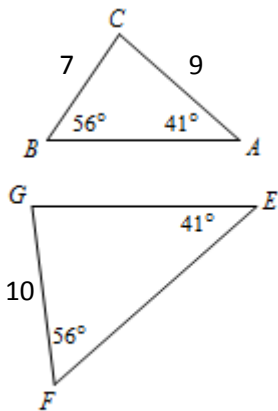
1. $\triangle ABC \sim \triangle DEF$

2. $\square DORK \sim \square FEST$

3. Kite $SULY \sim$ Kite $TIME$

The following triangles are similar. Fill in the blank (order is important). Find the scale factor.

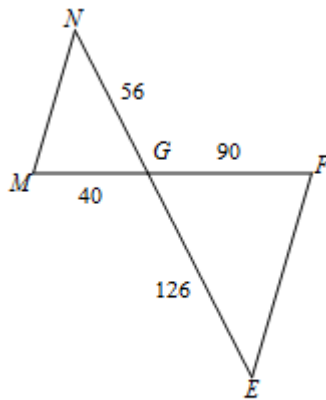
4.



$\triangle EFG \sim$ _____

Scale Factor =

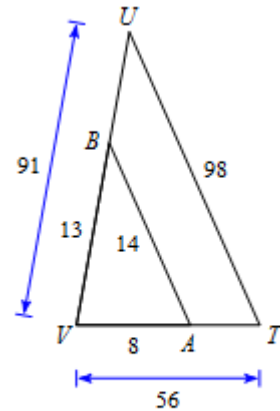
5.



$\triangle GFE \sim$ _____

Scale Factor =

6.

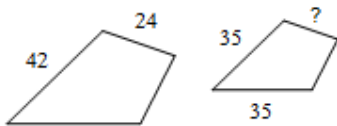


$\triangle VUT \sim$ _____

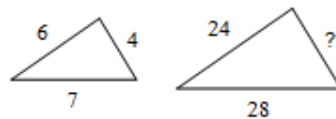
Scale Factor =

The polygons are similar. Find the missing length.

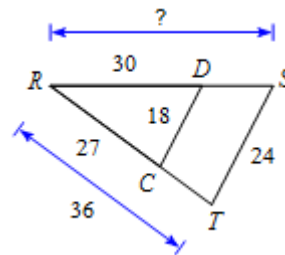
7.



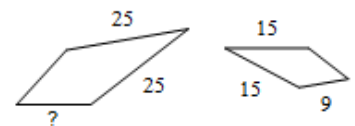
8.



9.



10.



The following polygons are similar. Find x .

11.

12.

13.

14.

15.

16.

ALGEBRA REVIEW

SOLVE
Simplify your solution
 $2x^2 = 54$

GRAPH

$y = -\frac{3}{4}x - 2$

MULTIPLY
 $(x - 3)(x + 3)$

SOLVE
Simplify your solution
 $x^2 + 5 = 25$

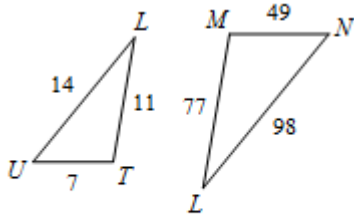
GRAPH

$y = x + 2$

FACTOR
 $x^2 + 7x + 12$

6.1 APPLICATION

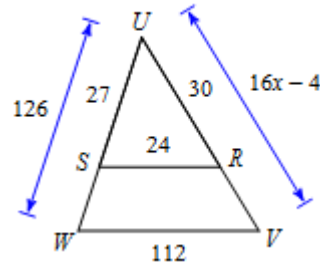
1. The following are similar. Fill in the blank and state the scale factor.



$\triangle LMN \sim$ _____

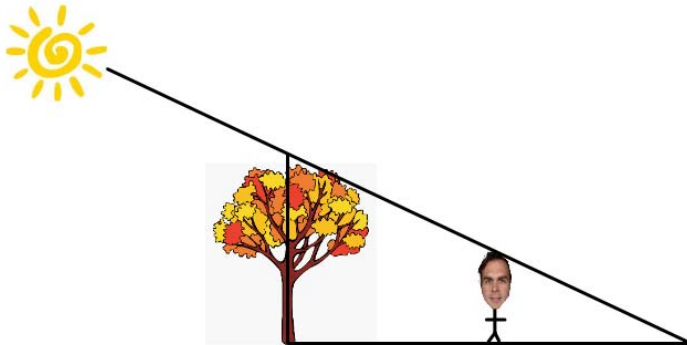
Scale Factor =

2. Find x .

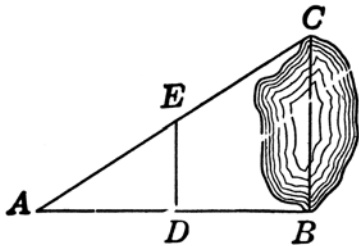


Watch the application walk through video if you need extra help getting started!

1. **CLASSIC GEOMETRY PROBLEM** Mr. Kelly is 6 feet tall (mostly his ginormous head) and standing 10 feet from a tree. Mr. Kelly is standing perfectly in the shadow of the tree. He casts an 11 foot shadow (mostly from his ginormous head). How tall is the tree?

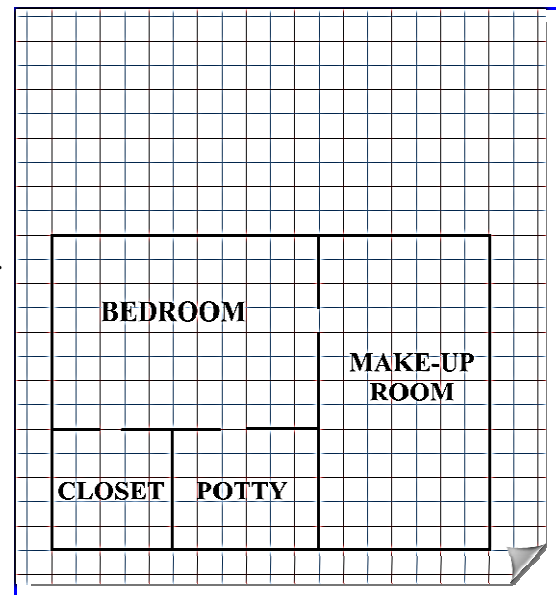


2. **OLD SCHOOL** Surveyors could find the width of a lake by using similar triangles. Bob, an old school surveyor, paces off the following: $AD = 90, DB = 30, AE = 120, EC = 40, ED = 50$ paces. Find the width of the lake, CB .



3. **DESIGN** Mr. Sullivan has an architect design the 3rd floor of his house. The scale of the blueprint is 2 unit = 9 feet.

- What are the dimensions of his make-up room?
- His dream home would have a dance studio off of his bedroom. The studio needs to be 27 ft by 40 ft in order to have room for his pirouettes. Draw the dance studio on the blueprint.



4. **Coordinate Geometry**

a. Plot the points on the graph below to make polygon *SMAL* and polygon *BIGY*



S = (-2,7)	M = (-1,9)	A = (1,9)	L = (5,7)
B = (-4,-3)	I = (-2,1)	G = (2,1)	Y = (10,-3)

b. What shape are the polygons? Are they congruent?

Mr. Brust is a big fan of the legendary rapper Notorious B.I.G. and thinks that BIGY and SMAL are similar. In tribute to Biggie Smalls he wants to prove it. Help a Geo teacher out.

c. If the polygons are similar than corresponding angles are congruent. Use a protractor to measure the angles. Are corresponding angles congruent?

$m\angle B =$	$m\angle I =$	$m\angle G =$	$m\angle Y =$
$m\angle S =$	$m\angle M =$	$m\angle A =$	$m\angle L =$

d. If the polygons are similar than the length of corresponding sides are the same proportion. Use the distance formula to find the length of each side (round to nearest tenth). Are the sides proportional?

$BI =$	$IG =$	$GY =$	$YB =$
$SM =$	$MA =$	$AL =$	$LS =$
$\frac{BI}{SM} =$	$\frac{IG}{MA} =$	$\frac{GY}{AL} =$	$\frac{YB}{LS} =$

