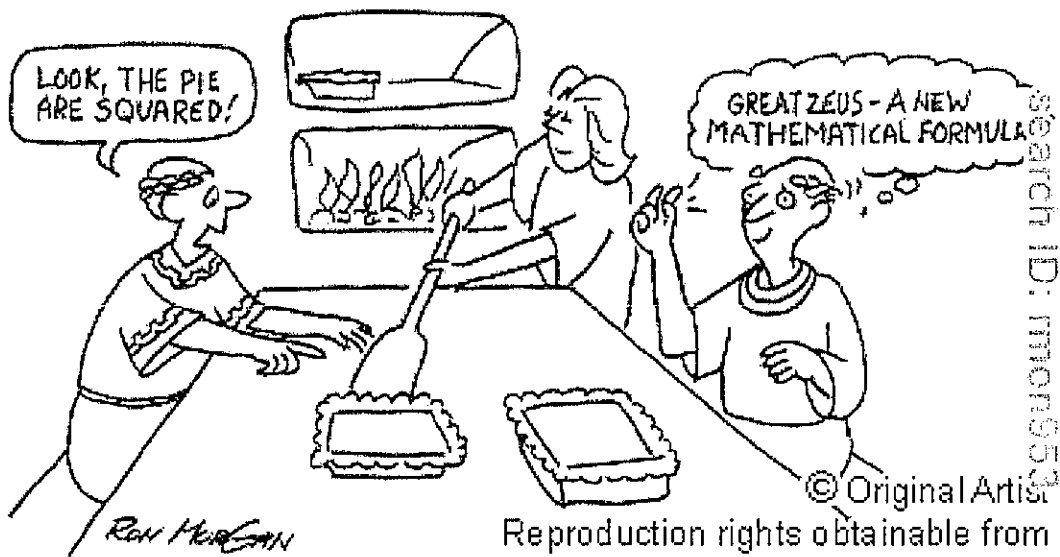


Name: _____

Hour: _____

Unit K: Similarity

Geometry 2nd Semester



Lesson 12-1: The Transformation of S

Vocabulary

Properties of a Dilation (S) Theorem: _____

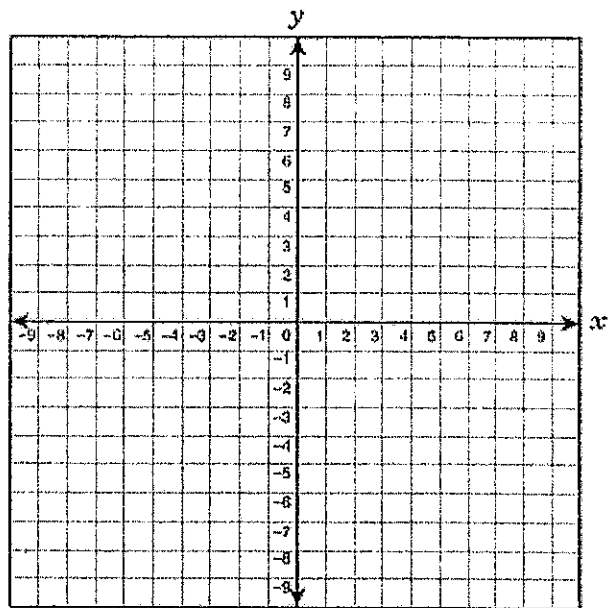
Practice

- Graph the segment AB , where $A = (-2, 4)$ and $B = (4, 2)$.

Graph $A'B'$ under a dilation where the image of (x, y) is $(3x, 3y)$ or S_3 .

What is the relationship between \overline{AB} and $\overline{A'B'}$?

How are AB and $A'B'$ related?

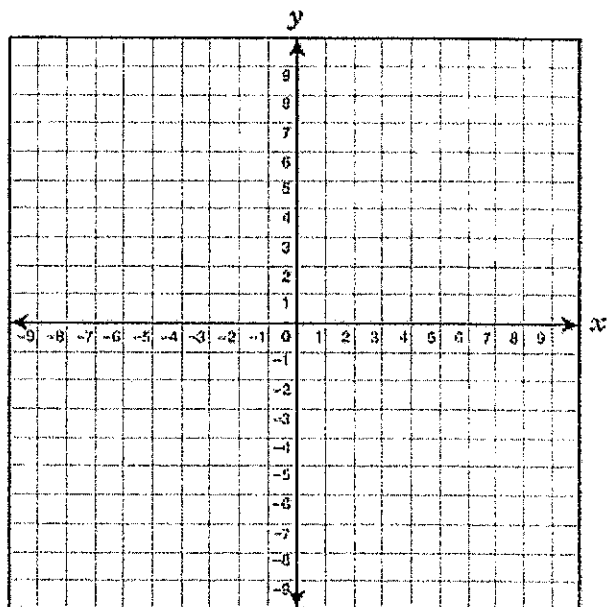


- Graph the square $ABCD$, $A = (4, 4)$, $B = (4, -4)$, $C = (-4, -4)$, and $D = (-4, 4)$.

Graph $A'B'C'D'$ under S_2 .

What is the relationship between \overline{AB} and $\overline{A'B'}$?

How are AB and $A'B'$ related?



Lesson 12-2: Properties of Dilations

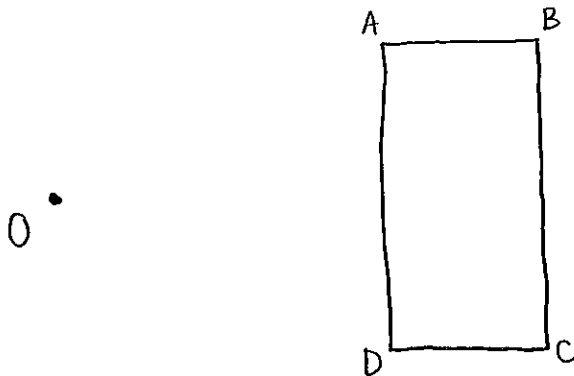
Vocabulary

Dilation Preservation Properties Theorem: _____

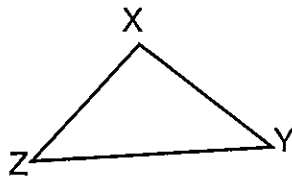
Expansion		
Contraction		
Identity		

Practice

1. Give the dilation of ABCD under magnitude 0.6 and center O.



2. Give the dilation of XYZ under magnitude 3 and center Z.



Lesson 12-3: More Properties of Dilations

Vocabulary

Dilation Distance Theorem: _____

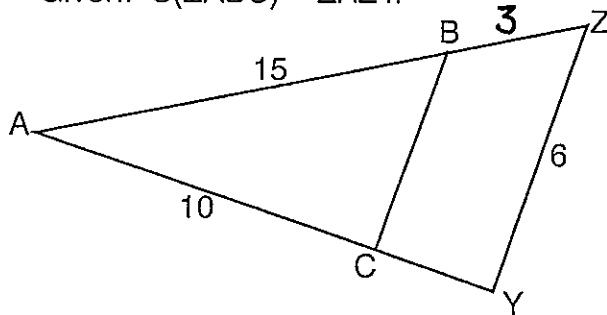
k: _____

k =

Practice

1. Name three properties preserved by dilations.

2. a) Find k , the magnitude of the size change.
Given: $S(\triangle ABC) = \triangle AZY$.



b) Find as many other lengths as you can.

3. If a segment AB is 12 in and segment $A'B'$ is 6 in, what is the magnitude (k) of the dilation?

4. Segment ZY is 20 cm and segment $\hat{Z}'Y'$ is 4 cm, what is the magnitude (k) of the dilation?

Lesson 12-4: Proportions

Vocabulary

Ratio: _____

Example:

Rate: _____

Example:

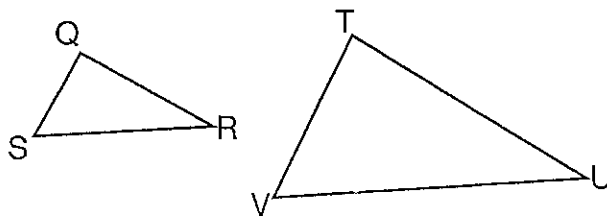
Proportion: _____

$$\frac{a}{b} = \frac{c}{d}$$

Means-Extremes Property: _____

Practice

1. $\triangle QRS$ is the image of $\triangle TUV$ under a size change with center O . If $QR = 10$, $RS = 15$, and $TU = 25$, find UV .



Lesson 12-5: Similar Figures

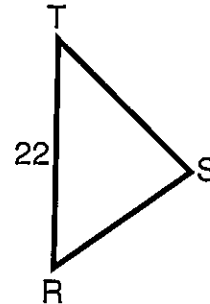
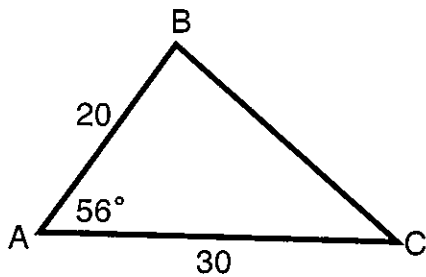
Vocabulary

Similar (\sim): _____

Practice

1. $ABCD \sim WXYZ$. $ABCD$ is the image of $WXYZ$ under S_2 . If $m\angle B = 85$, $BC = 12.1$, and $AD = 4.2$, find any other angles and side lengths that you can.

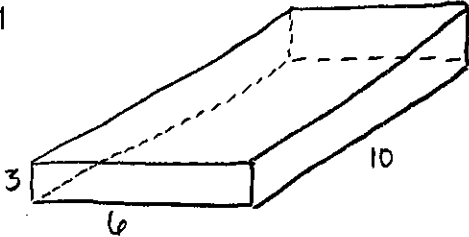
2. $\triangle ABC \sim \triangle RST$ with angle measures and side lengths as indicated. Find as many other angle measures and lengths in $\triangle RST$ as possible.



Lesson 12-6 & 12-7: Fundamental Theorem of Similarity

Example

Box 1

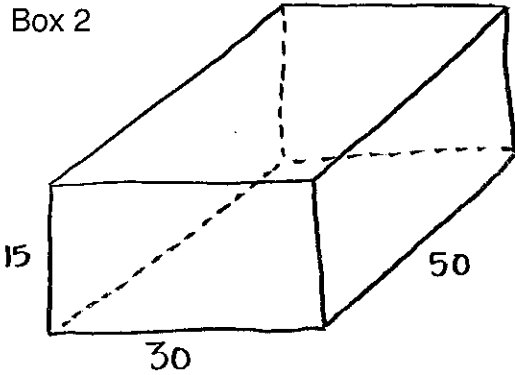


$P =$ _____

$SA =$ _____

$V =$ _____

Box 2



$P =$ _____

$SA =$ _____

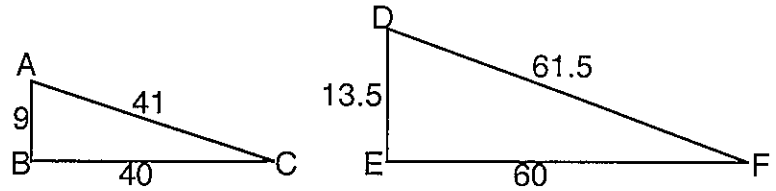
$V =$ _____

Vocabulary

Fundamental Theorem of Similarity: _____

When comparing two figures and their...		
Lengths	Areas	Volumes

Practice



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

a) Give the ratios of the perimeters.

b) Give the ratios of the areas.

2. A pizzeria sells 12" diameter pizzas with cheese and one topping for \$9.99 (plus tax). The price is based on the amount of ingredients used. What would the charge be for a 14" diameter pizza?

3. A deep dish 12" pizza with cheese sells for \$11. What would the charge be for a 15" diameter pizza?

4. An octagon has area 150 and longest side length 10. A similar octagon has longest side 4. What is the area of the similar octagon?

5. A pool with diameter 25 feet holds 12,000 gallons of water. A similar pool holds 2,592 gallons of water. What is the diameter of the similar pool?