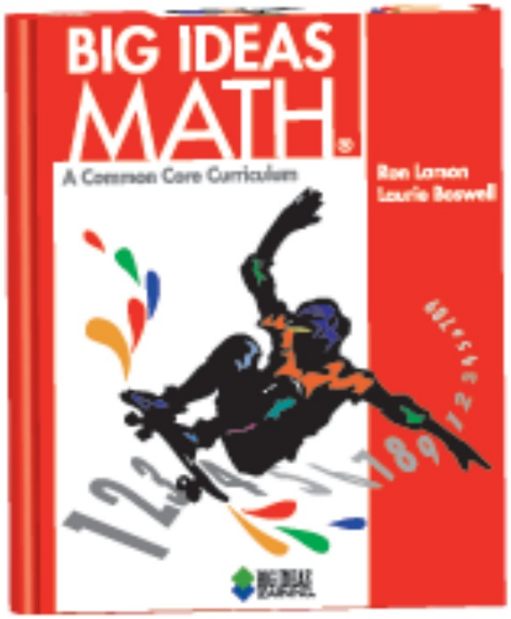
February 21, 2012 M7H

Get out Similarity WS1

Get out your RED Journal,



your notes and get your pencils sharpened. . .

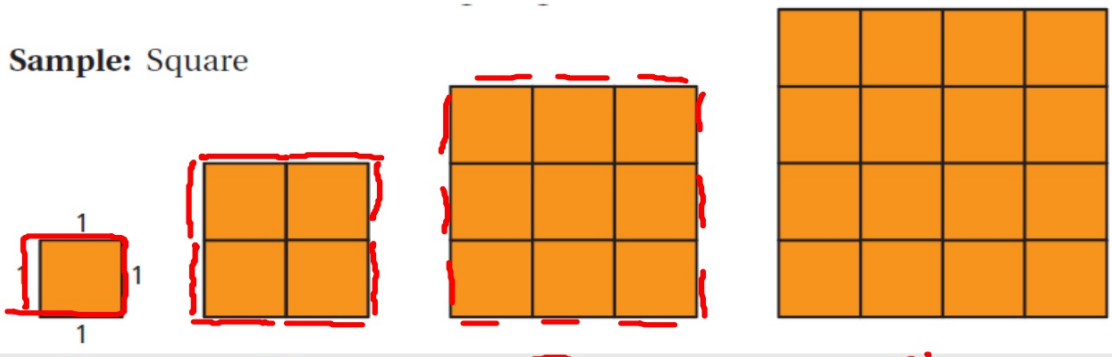
2/21 - Perimeters and Areas of Similar Figures

Similar means:

- Corresponding angles are the same
- Corresponding sides are proportional

Essential Question How do changes in dimensions of similar geometric figures affect the perimeters and areas of the figures?

a. **Sample:** Square



1 2 3 4

Original | Double the side | Triple the side | Quadruple the side

P=4 A=1 | P=8 A=4 | P=12 A=9 | P=16 A=16

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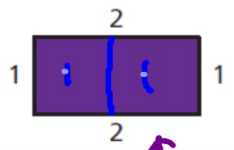
b. Triangle

$P = 3$	$P = 6$	$P =$ 9	$P =$ 12
$A =$ 1B	$A = 4B$	$A =$ 9B	$A =$ 16B

Original	Double the side	Triple the side	Quadruple the side

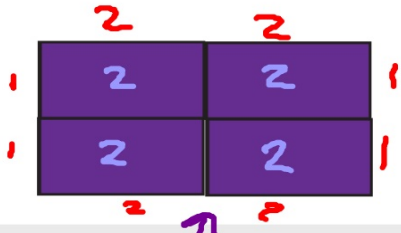
Work with your partner and do the same thing with this shape:

c. Rectangle



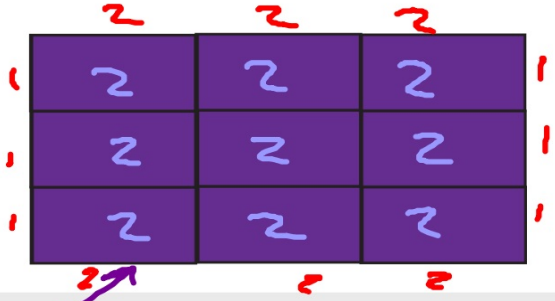
Original

$P=6$ $A=2$



Double the side

$P=12$ $A=8$



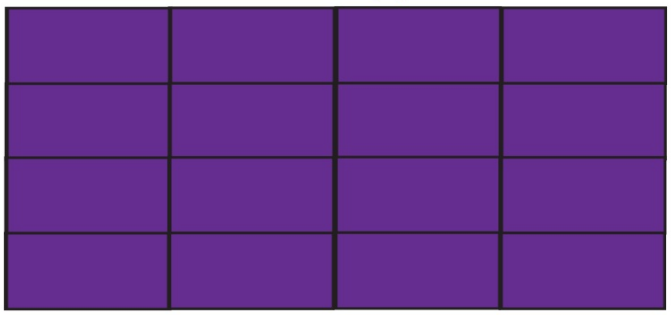
Triple the side

$P=18$ $A=18$

Quadruple the side

$P=24$

$A=32$



2 ACTIVITY: Finding Patterns for Perimeters

Work with a partner. Copy and complete the table for the perimeters of the figures in Activity 1. Describe the pattern.

	Figure	Original Side Lengths 1	Double Side Lengths 2	Triple Side Lengths 3	Quadruple Side Lengths 4
Perimeters		$P = 4$	$P = 8$	$P = 12$	$P = 16$
		$P = 3$	$P = 6$	P=9	P= 12
		$P = 6$	P=12	P=18	P=24
		$P = 4$	P = 8	P=12	P= 16

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3 ACTIVITY: Finding Patterns for Areas

Work with a partner. Copy and complete the table for the areas of the figures in Activity 1. Describe the pattern.

	Figure	Original 1 Side Lengths	Double Side 2 Lengths	Triple Side 3 Lengths	Quadruple 4 Side Lengths
Areas		$A = 1$	$A = 4$	$A = 9$	$A = 16$
		$A = B$	$A = 4B$	$A = 9B$	$A = 16B$
		$A = 2$	$A = 8$	$A = 18$	$A = 32$
		$A = C$	$A = 4C$	$A = 9C$	$A = 16C$

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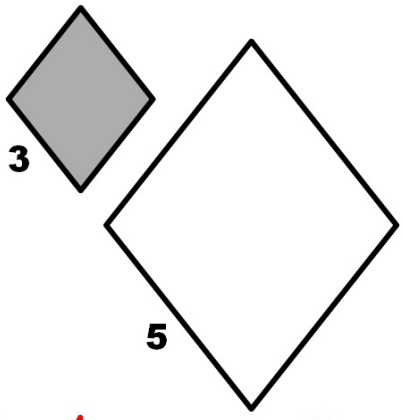
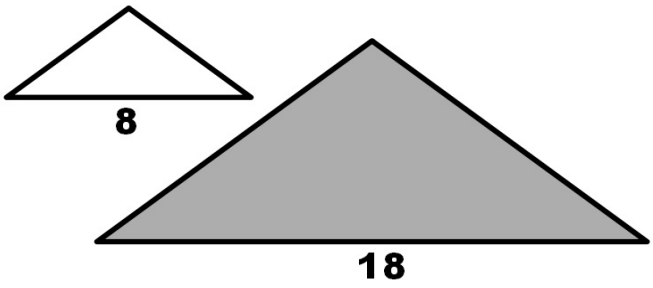
The two figures are similar. Find the ratios (shaded to nonshaded) of the perimeters and of the areas.



Perimeter: 3:5

Area: 9:25



Perimeter: 18:8 (9:4)

Area: 81:16

You buy two picture frames that are similar. The ratio of their corresponding sides is 5:8. What is the ratio of their area?

P: 5:8

A: 25:64

What is the ratio of their area if the ratio of their corresponding sides is 3:5?

Area: 9:25

Homework

Page 114 #1-6 in your red journal

Due Wednesday