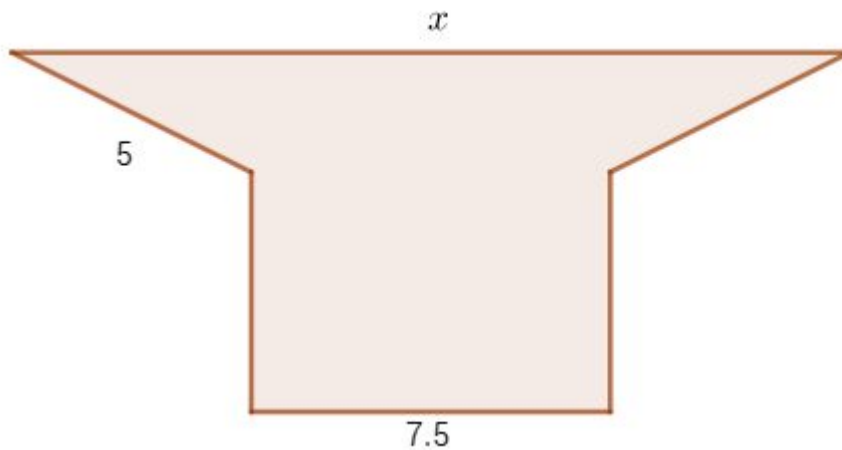
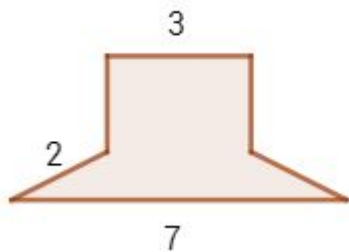


Warm Up

Solve for x in two ways: using proportions and using scale factor



3.1.3 - Using Ratios of Similarity

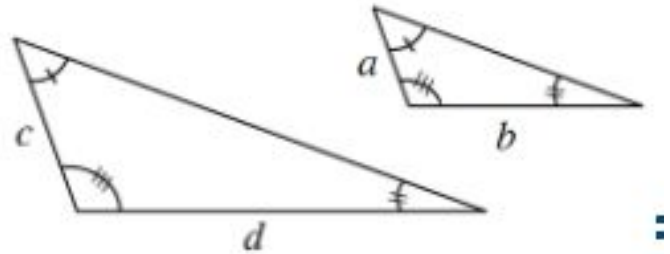
— Aim: What is a proportional equation? How can I apply them to similar figures? —

Proportional Equations

Proportional equations - Equations that compare two or more ratios

Proportional equations can compare two pairs of corresponding sides of similar figures, or can compare two parts of one shape to the corresponding parts of another.

What proportional equations can we form using the two triangles to the right?

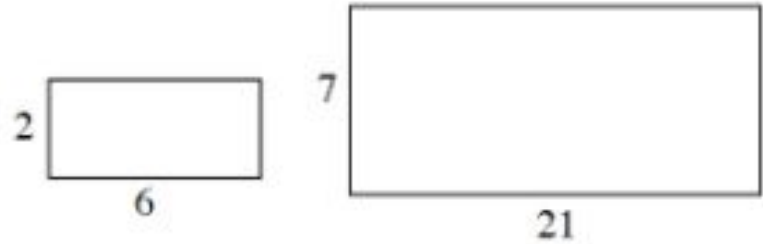


Ratios of Similarity

Copy down the rectangles to the right into your notes - make sure to properly label the sides

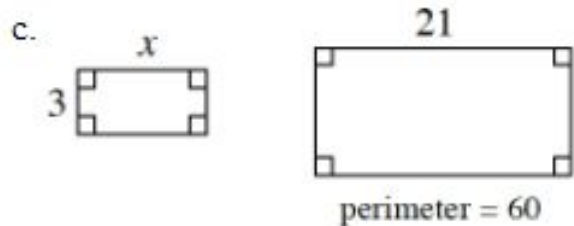
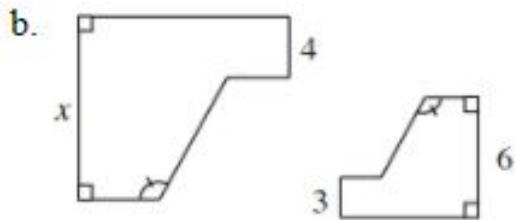
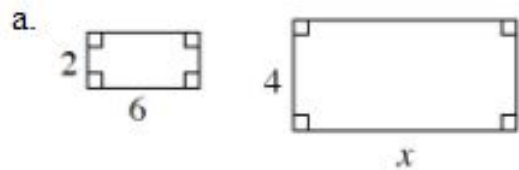
We know that **similar figures** have sides that are proportional - how can we use our knowledge to determine that these rectangles are similar?

Error analysis: Mr. Mark claims that these figures are not similar. When comparing the ratios of the heights, he found that the ratio is $2/7$, and then found that the ratio of the bases is $21/6$. What did he do wrong?



Ratios of Similarity

Each of the pairs of figures to the right are similar. Use what you know about similarity to solve for x



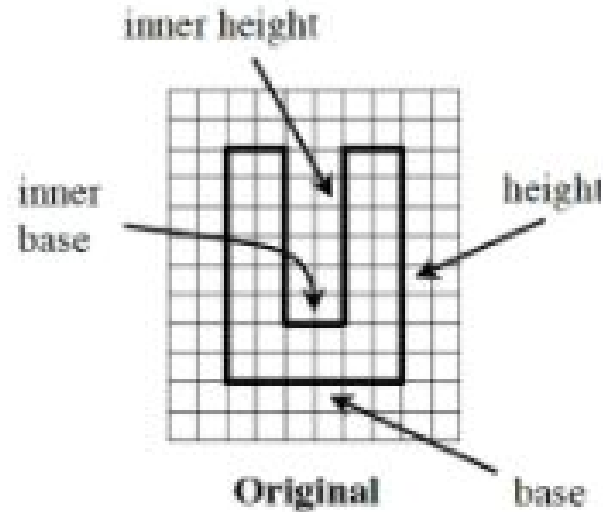
Similar Figures and Perimeter

Copy the figure to the right onto graph paper (make sure that the dimensions are accurate)

Dilate this figure using a scale factor of $\frac{3}{2}$ (1.5) - what is the height of the new figure?

Find the ratio of the **perimeters** - that is find $\frac{\text{perimeter new}}{\text{perimeter original}}$

What do you notice about the ratio?



Similar Figures and Area

Find the area of the figure to the right

Dilate the figure to the right using a scale factor of 2 - then find the area of the new figure

What is the ratio of the areas?



Classwork, Recap and Homework

Classwork: Purple book pg. 375-376 #1-20 (from yesterday), #21-39

Proportional equations - Equations that compare two or more ratios

Perimeter - Multiply by the scale factor

Area - Multiply by the scale factor *squared*

Homework: On PupilPath and lightningmark.com