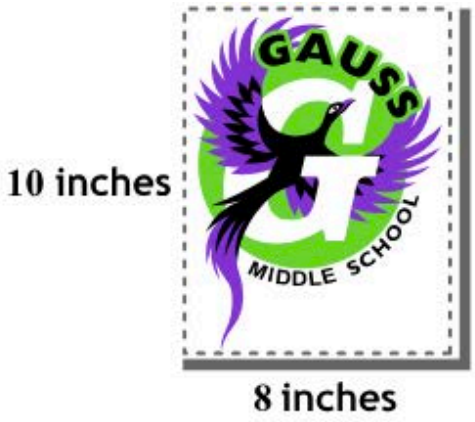
Student:_____Class:_____Date_____

Using ratios

Block 3 Student Activity Sheet

1. Suppose you want to enlarge an image to create a mural. The dimensions of the original image are 8 inches by 10 inches. The mural must be 68 inches wide to fit on the wall.



   a. What is the quotient of the width of the mural to the width of the original image?

   b. What is the scale factor from the original image to the mural?

   c. Use the scale factor to calculate the height of the mural.

Width	Length
5 inches	7 inches
30 inches	? inches

2. Mark wants to increase the width of this image from 5 inches to 30 inches.

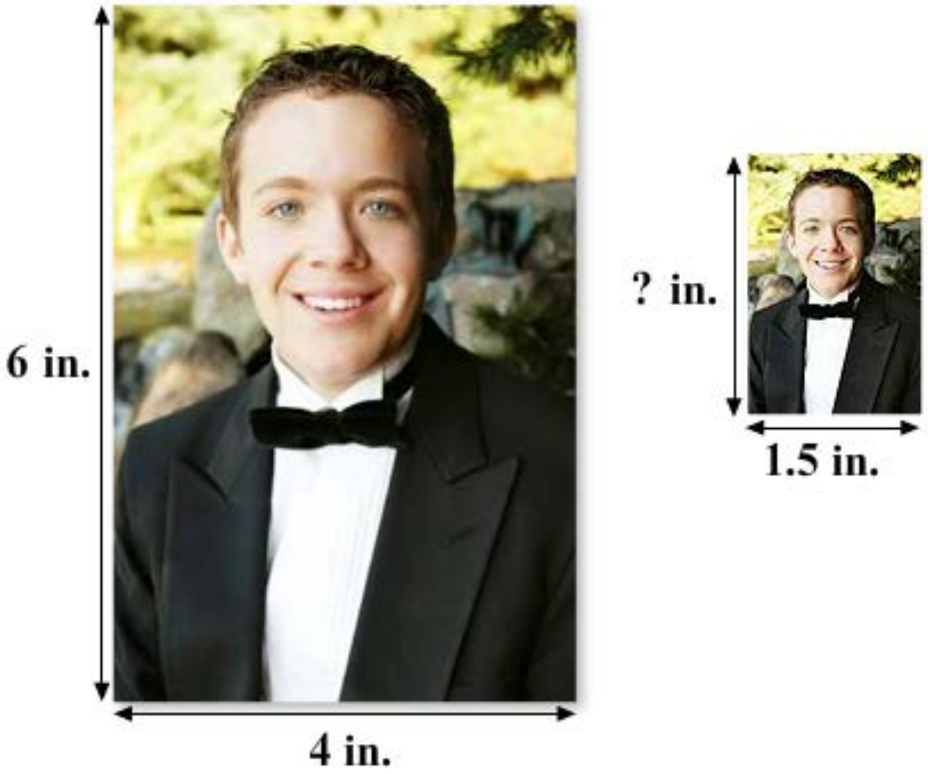
   a. If he proportionally increases the length as well, what scale factor should he use?

   b. What proportions can you create using this scale factor?

   c. Write an equation you could use to find the new length.

3. Find other dimensions of posters that are proportional to the original.

Poster height	Poster width
7 inches	15 inches
	15 inches
28 inches	
10.5 inches	
	$18\frac{3}{4}$ inches



4. The picture on the left was proportionally reduced to create the picture on the right.

   a. Estimate the value of the new height.

   b. What is a reasonable value for the scale factor?

   c. Now find the scale factor and the new height.

5. Reduce the image from question 2 to make proportional images. Fill in the table with possible reductions.

2 in.	1.5 in.	2.5 in.	$\frac{5}{7}$ in.	$\frac{7}{5}$ in.	1 in.

Height	Width
7 inches	5 inches
3.5 in.	
	1 in.
1 in.	

6. **REINFORCE** Veronica makes miniature furniture for dollhouses. Each miniature piece is a scale model of the real furniture in her family's home.

Veronica is working on the dimensions of a miniature grandfather clock. Her family's real clock is 75 inches tall and 28 inches wide.

a. What is the quotient of height to width in fraction form?

b. Veronica decides that the height of the miniature clock needs to be 5 inches to fit in the dollhouse. Write an equation you could use to find the scale factor from the real clock to the miniature clock. Use the height of the original clock, the unknown scale factor, and the known height of the miniature clock in your equation.

c. What is the scale factor from the real clock to the miniature clock?

d. What will be the width of the miniature grandfather clock? Sketch and label pictures of the real grandfather clock and the dollhouse grandfather clock.