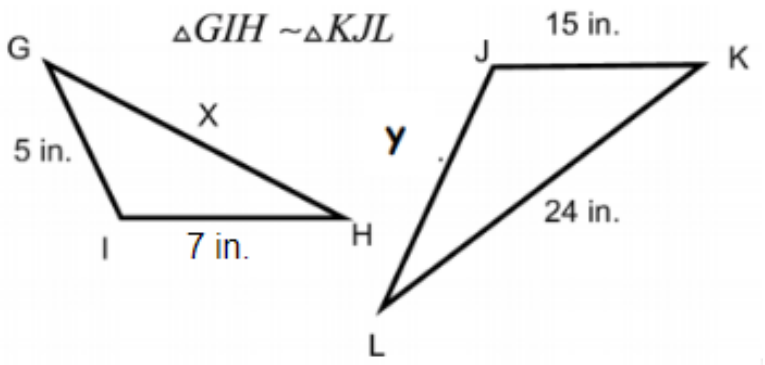
G4a-3 Investigation
Solving proportions

Name _____

1. So far, we have been able to identify the scale factor and use it to find missing side lengths. For example, given the similarity statement:

a. **Mark** the congruent angles
b. **Color** corresponding sides the same color
c. **Identify** the scale factor
d. **Solve** for x and y

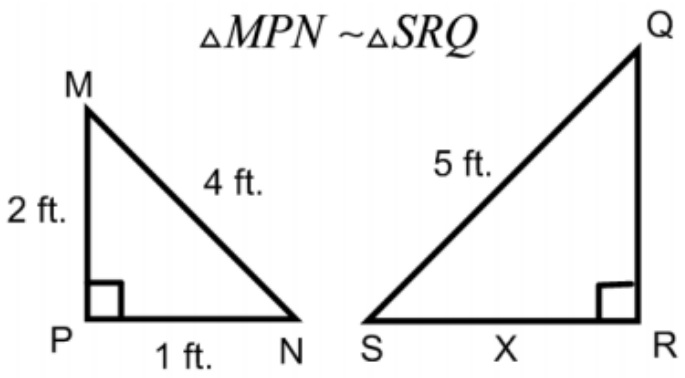


Scale factor: _____

How do you know?

x = _____ Show or explain your work:	**y** = _____ Show or explain your work:

2. When the scale factor and side lengths are not a whole number, this can be more difficult. Learning to write and solve a proportion allows us to solve for any missing side lengths between two similar triangles.



a. **Mark** the congruent angles
b. **Identify** the side on the other triangle that corresponds to the unknown (x) side (write the left side of the proportion)
c. **Identify** the corresponding sides where we know the side lengths on both triangles (write the right side of the proportion)
d. **Solve** for x

$$\frac{x}{\quad} = \frac{\quad}{\quad}$$

$$\frac{\textbf{x}}{\textbf{corresponding side on other triangle}} = \frac{\textbf{known side on triangle with x}}{\textbf{corresponding side on other triangle}}$$

$$\frac{\text{x}}{\text{corresponding side on other triangle}} = \frac{\text{known side on triangle with x}}{\text{corresponding side on other triangle}}$$

Use proportions to solve for the missing side lengths below.