

# Journal #18

For this journal I chose to do problem #4 pg 46. This problem gave you a triangle with sides of 5, 7, and 8. It told you that the longest side of a similar triangle was 6 and asked you to find the lengths of the other two sides.

I knew that since 8 was the longest side of the known triangle it would correspond to 6. So I set up two ratios and solved for x:

$$\frac{6}{8} = \frac{5}{x} \quad \frac{6}{8} = \frac{7}{x}$$

$$6x = 40 \quad 6x = 56$$

$$x = 6\frac{2}{3} \quad x = 9\frac{1}{3}$$

In class I realized that I had not set up my ratios correctly and so got incorrect answers. Because lengths from the same side have to be on the part of the fraction, whether it be the numerator or denominator, making the correct ratios and answers:

$$\frac{6}{8} = \frac{x}{5}$$

$$8x = 30$$

$$x = 3.75$$

$$\frac{6}{8} = \frac{x}{7}$$

$$8x = 42$$

$$x = 5.25$$

\* Note these could also be switched around so that it created the ratios  $\frac{8}{6} = \frac{7}{x}$  and  $\frac{8}{6} = \frac{5}{x}$ .

I chose to do this problem because we have been doing a lot of work with ratios and I want to remember not to make this mistake again. This problem relates to #5 5-7 on pg 46 as well as all the other ratio problems that we have done.

yes, ratios are everywhere