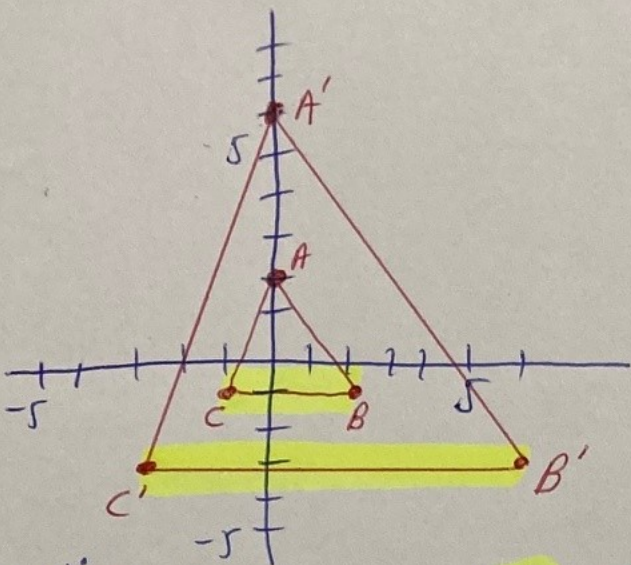
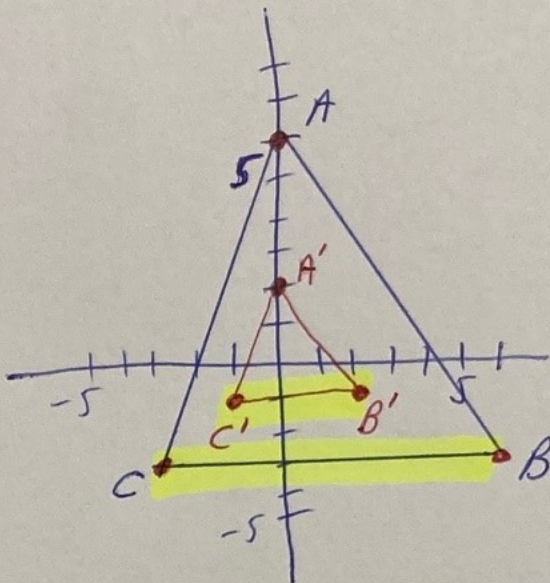


Extra Review for District Quiz (and my test)

1.) Find the scale factor of the dilation.



SOLUTION:
 $k = \frac{\text{image}}{\text{pre-image}} = \frac{9}{3} = 3$

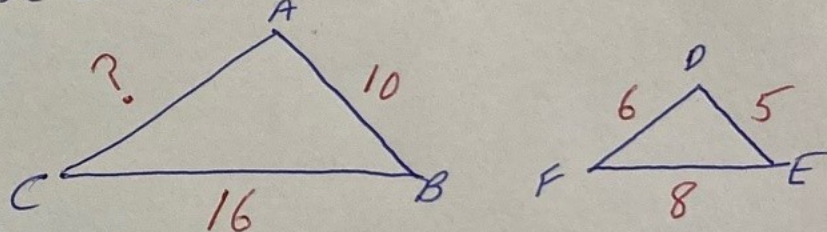


$k = \frac{\text{image}}{\text{pre-image}} = \frac{3}{9} = \frac{1}{3}$

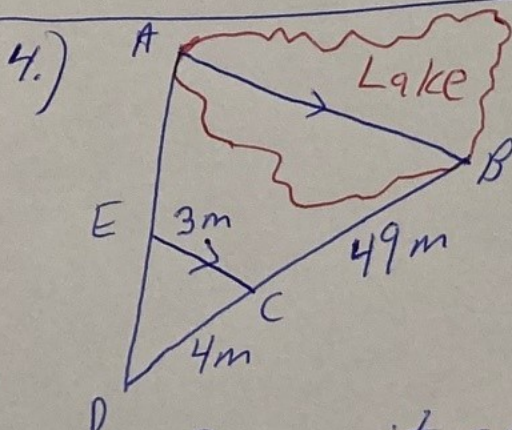
2.) How can we find lengths or heights in real life by using Similarity?

We can use the sun and shadows to create two similar triangles. We can then cross-multiply the two corresponding ratios and solve for x.

3.) What must be the length of AC for the triangles to be similar?

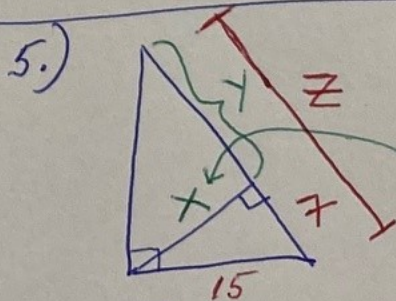


SOLUTION:
 $k = \frac{10}{5} = 2$ $k = \frac{16}{8} = 2$
 So $\frac{x}{6} = 2 \rightarrow x = 2 \cdot 6 \rightarrow x = 12$



4.) How far is it across the lake from A to B?

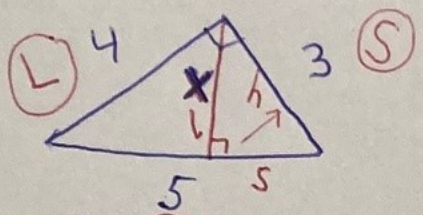
SOLUTION:
 $\frac{4}{3} = \frac{53}{x}$
 $4x = 159 \rightarrow \frac{4x}{4} = \frac{159}{4} \rightarrow x = 39.75 \text{ meters}$



Find the value of z.

SOLUTION:
 Put in x for the middle segment, and y for the other missing segment.
 $x^2 + 7^2 = 15^2$
 $x^2 + 49 = 225$
 $x^2 = 176$
 $x = \sqrt{176} = 13.27$
 $7y = 176.09$
 $y \approx 25$
 So $z = 7 + 25 = 32$

6.) Find the value of X.



SOLUTION:
Small Δ

$$\frac{4}{h} \rightarrow \frac{x}{3} \rightarrow \frac{4}{5}$$

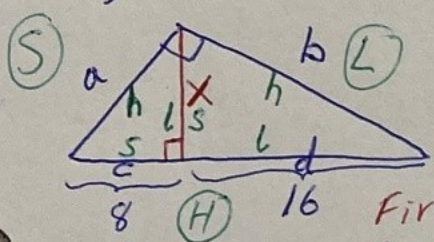
big Δ
 $\leftarrow \frac{4}{h}$

$$5x = 12$$

$$\frac{5x}{5} = \frac{12}{5}$$

$$x = 2.4$$

7.) What is a? Sides c and d have an 8 to 16 ratio.



First, mark the 8 and 16.
Mark X for the inside segment.
Mark L, S, h.

SOLUTION:

Solve for X first.

Small Δ

$$\frac{6}{5} \rightarrow \frac{x}{8} = \frac{16}{x}$$

medium Δ

$$\leftarrow \frac{6}{5}$$

$$x^2 = 128$$

$$x = \sqrt{128} = 11.3137 \approx \underline{\underline{11.31}}$$

Now solve for a.

$$a^2 + b^2 = c^2$$

$$8^2 + (11.31)^2 = c^2$$

$$64 + 127.92 = c^2$$

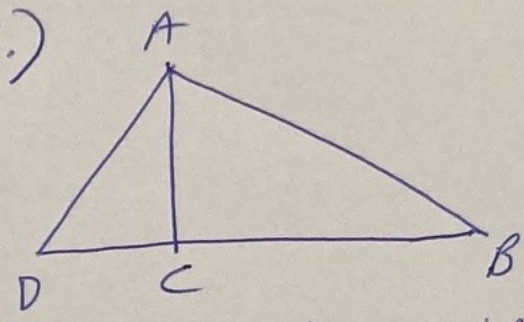
$$191.92 = c^2$$

$$\sqrt{191.92} = c$$

$$13.85 = c$$

$$\text{So side } a = 13.85$$

8.)



How do we know that the two triangles are similar?

ANSWER:

If AC is the geometric mean OR if ACB (or ACD) is marked as a right 90° angle.

9.) How do we use similar triangles in real life? Give an example.

We can use the sun and the shadows it creates, to create similar triangles of me and a sky scraper for example. Then use the two ratios, cross-multiply and solve for the height X.