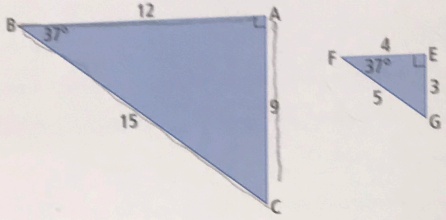


4.3A.4 Similar Shapes

Example 1: Identify Similar Triangles

Determine if $\triangle ABC$ is similar to $\triangle EFG$.



JYI: All angles in a triangle add to 180°

$$\text{Square} = 360^\circ$$

Similar shapes are two shapes that look identical except for their size. Similar shapes have EQUAL corresponding angles and PROPORTIONAL sides.

Similar shapes have equal angles $\therefore \dots$

$$\begin{array}{lll} \angle CBA & \angle B = \angle F & \angle A = \angle E & \angle C = \angle G \\ 37^\circ = 37^\circ & 90^\circ = 90^\circ & 180 - 90 - 37 = 180 - 90 - 37 \\ & & 53^\circ = 53^\circ \end{array}$$

$$\frac{BA}{FE} = \frac{AC}{EG} = \frac{BC}{FG}$$

$$\frac{12}{4} = \frac{9}{3} = \frac{15}{5}$$

$$3 = 3 = 3$$

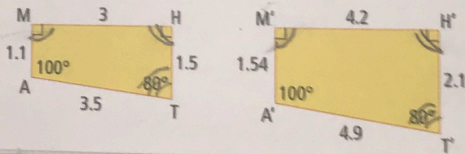
Scale from small to big = 3

From big to small = $\frac{1}{3}$

These triangles are similar because they have equal angles and proportional sides.

Show You Know

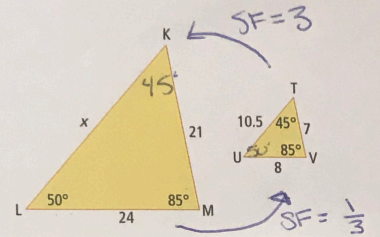
The two quadrilaterals look similar. Is $M'A'T'H'$ a true enlargement of MATH? Explain.



Example 2: Use Similar Triangles to Determine a Missing Side Length

Kyle is drawing triangles for a math puzzle. Use your knowledge of similar triangles to determine

- if the triangles are similar
- the missing side length



$$\begin{aligned} \text{Corresponding side} &= TU \\ &= 10.5 \times 3 \\ x &= 31.5 \end{aligned}$$

Show You Know

The two trapezoids shown are similar. Determine the missing side length. Show your work.

