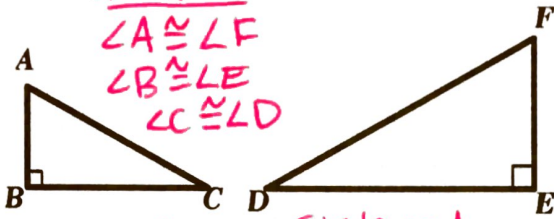


HW 8-7: Similarity

The following figures are similar. Write the similarity statements for each set of similar figures. List all pairs of congruent angles and write the statements of proportionality for all corresponding sides.

1.

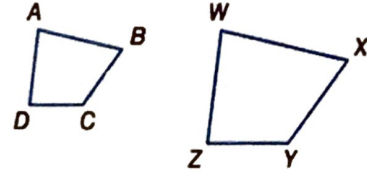


ANGLES
 $\angle A \cong \angle F$
 $\angle B \cong \angle E$
 $\angle C \cong \angle D$

Sim. Statement
 $\triangle ABC \sim \triangle FED$

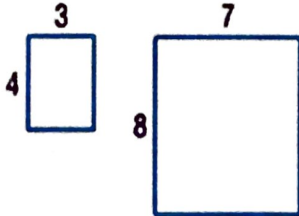
Statement of Proportionality
 $\frac{AB}{FE} = \frac{BC}{ED} = \frac{CA}{DF}$

2.



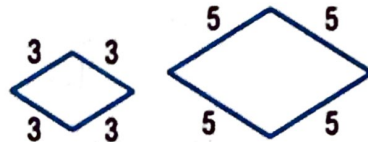
Determine whether each pair of polygons is similar. Explain.

3.



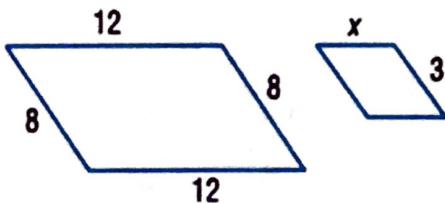
NO, $4 \cdot 2 = 8$
 But $3 \cdot 2 \neq 7$
~~X~~ SIDES ARE NOT
 PROPORTIONAL.

4.



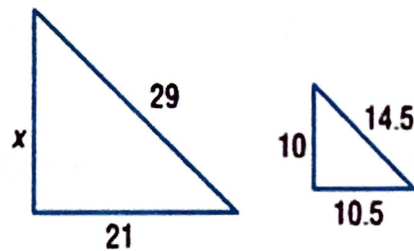
The two figures are similar. Find the missing side lengths.

5.



$x = 4.5$

6.



7. The scale factor from the model of a human inner ear to the actual ear is 55:2. If one of the bones of the model is 8.25 centimeters long, how long is the actual bone in a human ear?

0.3 cm

Determine whether each statement is true or false. If true, explain your reasoning. If false, provide a counterexample.

8. All rectangles are similar.

9. All squares are similar.

True! All \cong angles & sides will be proportional.

10. Quadrilateral $RSTU$ is similar to quadrilateral $WXYZ$. Which of the following statements is not always true?

(A) $\angle RST \cong \angle WXY$

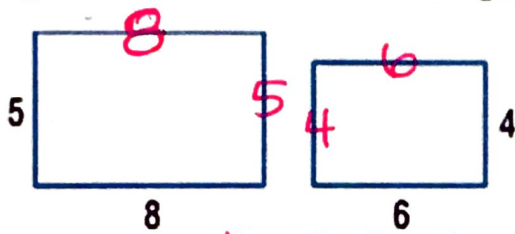
(C) $\angle TUR \cong \angle YZW$

(B) $\frac{ST}{XY} = \frac{TU}{YZ}$

(D) $\overline{RS} = \overline{WX}$

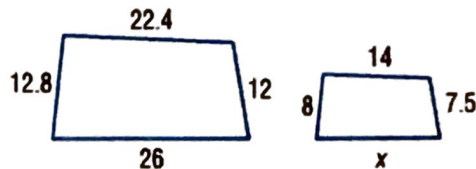
The two figures are similar. Find the missing side lengths.

11.

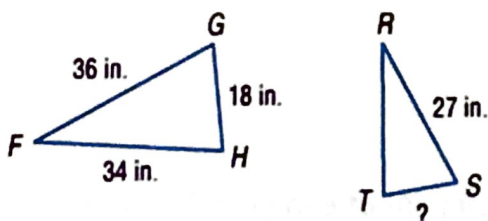


SKIP THIS ONE! (with a smiley face)

12.



13. Triangle FGH is similar to triangle RST .



What is the length of \overline{TS} ?

(A) $13\frac{1}{2}$ inches

(C) 24 inches

(B) $22\frac{2}{3}$ inches

(D) $25\frac{1}{2}$ inches

$\triangle DEF \sim \triangle GHI$. What is the value of GH if $EF = 6$ meters, $DE = 9$ meters, and

14. $HI = 10$ meters?

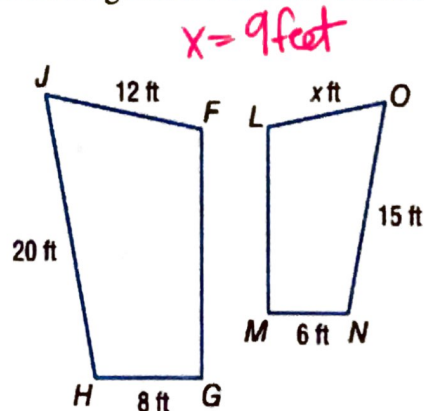
(F) 5.4 m

(H) 15 m

(G) 9 m

(I) 19.4 m

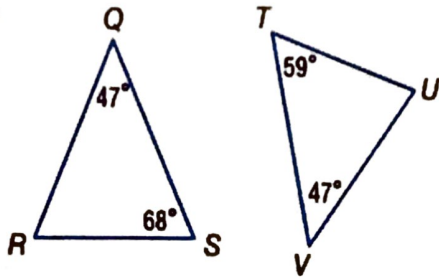
15. The two figures are similar. Solve for x .



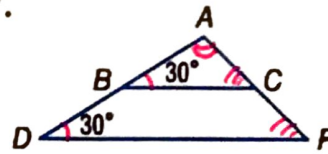
Determine whether the triangles are similar. If so, write a similarity statement. (Example 1)

16.

Show your work.

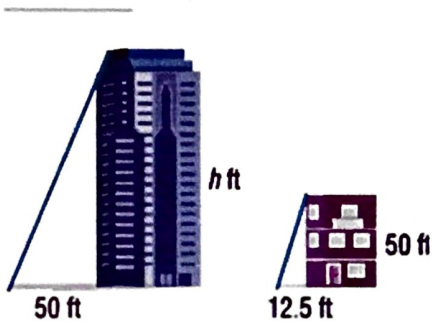


17.

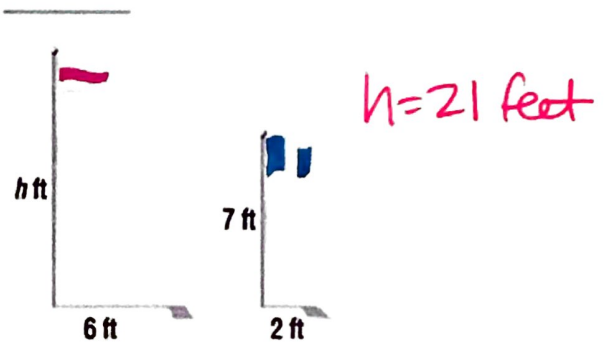


Yes, they are similar
 $\triangle ABC \sim \triangle ADF$

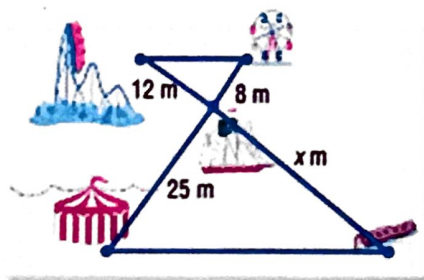
18. How tall is the building? (Example 2)



19. How tall is the taller flagpole? (Example 2)

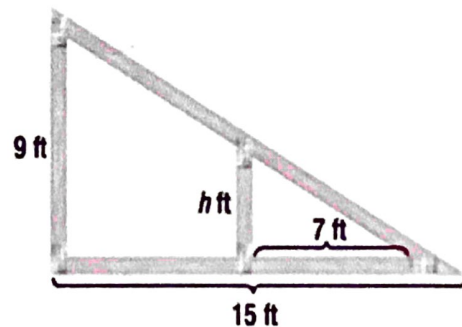


20. How far is it from the log ride to the pirate ship? (Example 3)



21. Find the height of the brace. (Example 3)

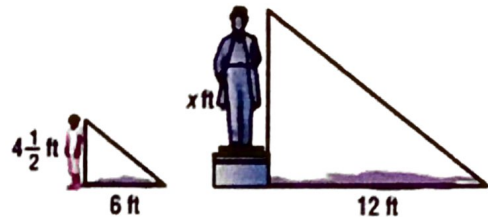
$h = 4.2$ feet



22. **CCSS Reason Abstractly** The Giant Wheel at Cedar Point in Ohio is one of the tallest Ferris wheels in the country at 136 feet tall. If the Giant Wheel casts a 34-foot shadow, write and solve a proportion to find the height of a nearby man who casts a $1\frac{1}{2}$ -foot shadow.
-
-

23. Mila must determine the height of the statue to make a scale drawing of it. Mila is $4\frac{1}{2}$ feet tall, and her shadow is 6 feet long. At the same time, the statue's shadow is 12 feet long. What is the height of the statue?

- (A) $8\frac{1}{4}$ ft (C) $13\frac{1}{2}$ ft
 (B) 9 ft (D) 24 ft



24. Find the distance across the river. _____

