

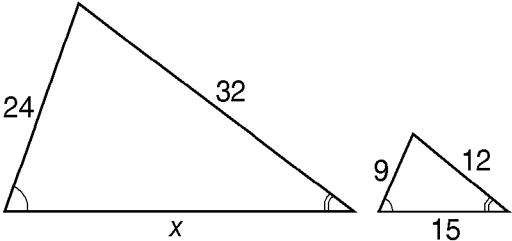
Name: _____
Geometry

Similar Figures

- 1) Which polygons are *always* similar?
 - A) trapezoids
 - B) rectangles
 - C) parallelograms
 - D) equilateral triangles

- 2) Which pair of triangles must be similar?
 - A) two isosceles triangles with congruent vertex angles
 - B) two scalene triangles with congruent bases
 - C) two obtuse triangles
 - D) two right triangles

- 3) The accompanying diagram shows two similar triangles.



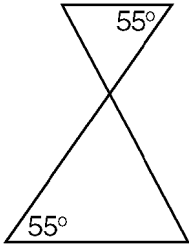
Which proportion could be used to solve for x ?

- A) $\frac{24}{9} = \frac{15}{x}$
- B) $\frac{x}{24} = \frac{9}{15}$
- C) $\frac{32}{x} = \frac{12}{15}$
- D) $\frac{32}{12} = \frac{15}{x}$

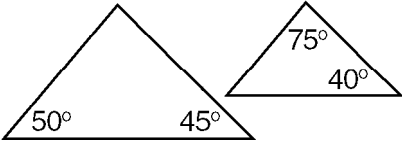
Questions 4 and 5 refer to the following:

Are the given triangles similar? Explain why or why not.

4)



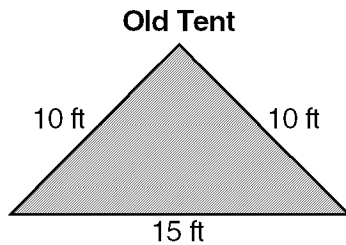
5)



- 6) The lengths of the sides of a triangle are 4, 5, and 6. If the length of the longest side of a similar triangle is 15, what is the length of the *shortest* side of this triangle?

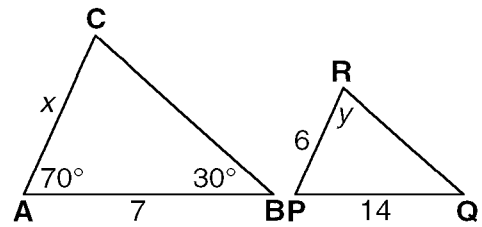
- 7) The sides of a triangle have lengths 3, 5, and 7. In a similar triangle, the shortest side has length $x - 3$, and the longest side has length $x + 5$. Find the value of x .

- 8) The Rivera family bought a new tent for camping. Their old tent had equal sides of 10 feet and a floor width of 15 feet, as shown in the accompanying diagram.

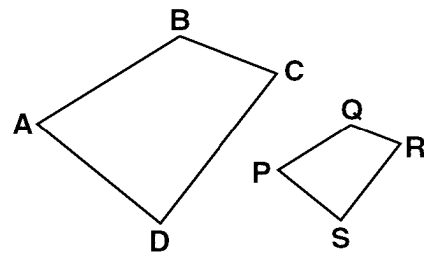


If the new tent is similar in shape to the old tent and has equal sides of 16 feet, how wide is the floor of the new tent? Show all work.

- 9) If $\triangle ABC \sim \triangle PQR$, find the value of x and y .



- 10)



If quadrilateral $ABCD \sim$ quadrilateral $PQRS$, $AD = 7$, $AB = 5x - 1$, $PS = 4$, and $PQ = 2x + 2$, then find the value of x .

1) D 2) A 3) C

4) Yes. The triangles are similar by AA Similarity.

5) No, the triangles are not similar. (Explanations may vary.)

6) 10

7) 9

8) 24 feet

WORK SHOWN: $\frac{15}{10} = \frac{x}{16}, x = 24$

9) $x = 3, y = 80^\circ$

10) 3