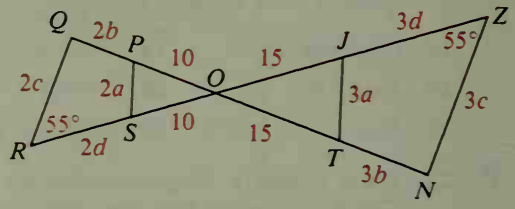
34. The card shown was cut into four congruent pieces with each piece similar to the original. Find the value of x.

35. Quad. *WHAT* is a figure such that $WHAT \sim HATW$. Find the measure of each angle. What special kind of figure must the quadrilateral be?

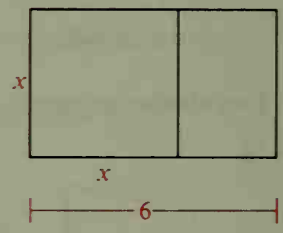
C **36.** What can you deduce from the diagram shown at the right? Explain.



37. The large rectangle shown is a *golden rectangle*. This means that when a square is cut off, the rectangle that remains is similar to the original rectangle.

a. How wide is the original rectangle?

b. The ratio of length to width in a golden rectangle is called the *golden ratio*. Write the golden ratio in simplified radical form. Then use a calculator to find an approximation to the nearest hundredth.



Self-Test 1

Express the ratio in simplest form.

1. 9:15 **2.** 60 cm to 2 m **3.** $\frac{4ab}{6b^2}$

Solve for x.

4. $\frac{x}{8} = \frac{9}{12}$ **5.** $\frac{x-2}{2} = \frac{x+6}{4}$ **6.** $\frac{x}{5-x} = \frac{12}{8}$

Tell whether the equation is equivalent to the proportion $\frac{a}{b} = \frac{5}{7}$.

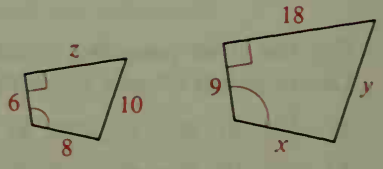
7. $\frac{a}{7} = \frac{b}{5}$ **8.** $7a = 5b$ **9.** $\frac{a+b}{b} = \frac{12}{7}$

10. If $\triangle ABC \sim \triangle RST$, $m\angle A = 45$, and $m\angle C = 60$, then $m\angle R =$ ___?___, $m\angle T =$ ___?___, and $m\angle S =$ ___?___.

The quadrilaterals shown are similar.

11. The scale factor of the smaller quadrilateral to the larger quadrilateral is ___?___.

12. $x =$ ___?___ **13.** $y =$ ___?___ **14.** $z =$ ___?___



15. The measures of the angles of a hexagon are in the ratio 5:5:5:6:7:8. Find the measures.