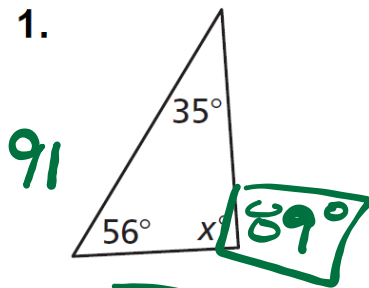
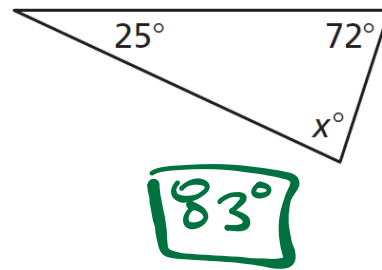


Find the missing angle measure.

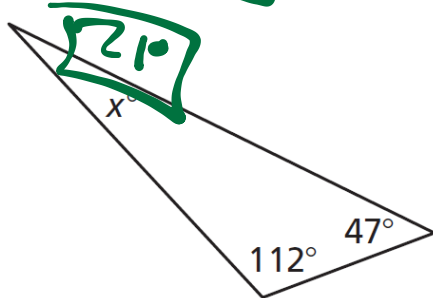
1.



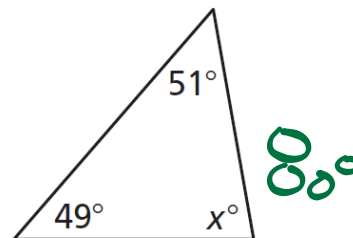
2.



3.



4.



Rewrite the definition of the term as a biconditional statement.

1. In an isosceles triangle, the legs are of equal length.
2. A tangram is a Chinese puzzle made up of seven pieces.
3. A rectangle is a parallelogram that has four right angles.

Essential Question

What conjectures can you make about the side lengths and angle measures of an isosceles triangle?

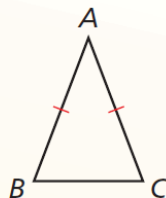
Theorems

Theorem 5.6 Base Angles Theorem

If two sides of a triangle are congruent, then the angles opposite them are congruent.

If $\overline{AB} \cong \overline{AC}$, then $\angle B \cong \angle C$.

Proof p. 252

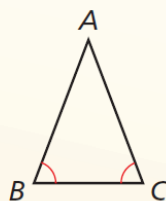


Theorem 5.7 Converse of the Base Angles Theorem

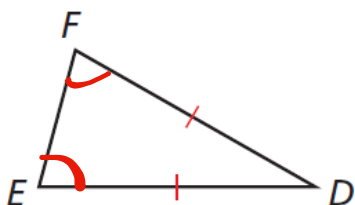
If two angles of a triangle are congruent, then the sides opposite them are congruent.

If $\angle B \cong \angle C$, then $\overline{AB} \cong \overline{AC}$.

Proof Ex. 27, p. 275



In $\triangle DEF$, $\overline{DE} \cong \overline{DF}$. Name two congruent angles.

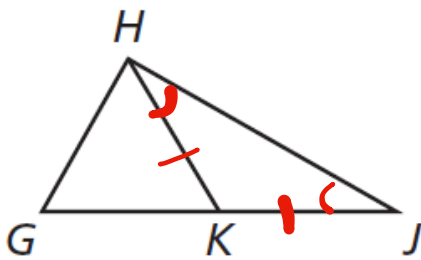


$$\angle EFD \cong \angle FED$$

Copy and complete the statement.

1. If $\overline{HG} \cong \overline{HK}$, then \angle G \cong \angle K .

2. If $\angle KHJ \cong \angle KJH$, then \overline{HK} \cong \overline{JK} .



Corollaries

Corollary 5.2 Corollary to the Base Angles Theorem

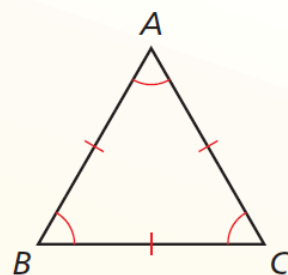
If a triangle is equilateral, then it is equiangular.

Proof Ex. 37, p. 258; Ex. 10, p. 353

Corollary 5.3 Corollary to the Converse of the Base Angles Theorem

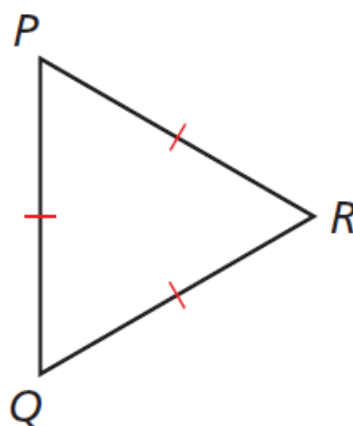
If a triangle is equiangular, then it is equilateral.

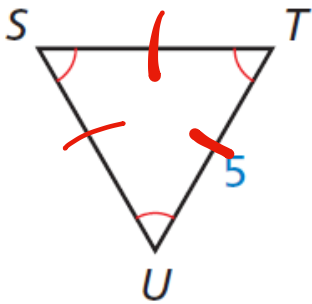
Proof Ex. 39, p. 258



Find the measures of $\angle P$, $\angle Q$, and $\angle R$.

$$\angle P \cong \angle Q \cong \angle R = 60^\circ$$

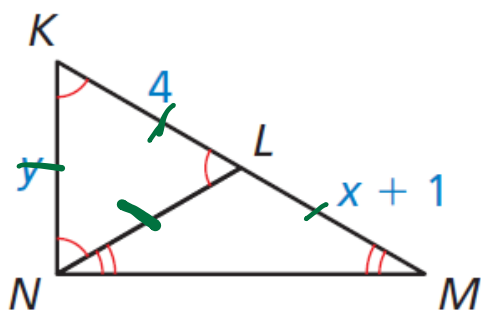




3. Find the length of \overline{ST} for the triangle at the left.

$$\overline{ST} = 5 \text{ units}$$

Find the values of x and y in the diagram.

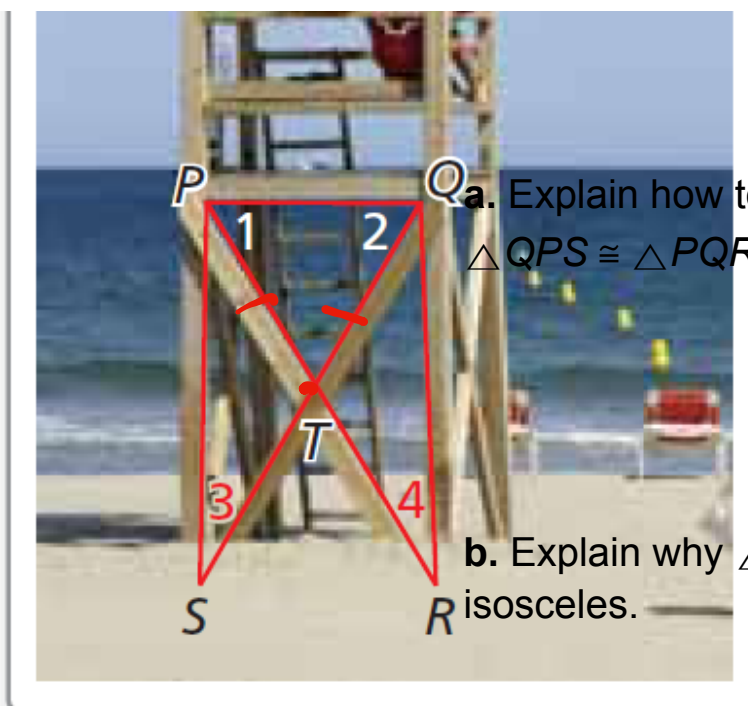


$$4 = x + 1$$

$$x = 3$$

$$y = 4$$

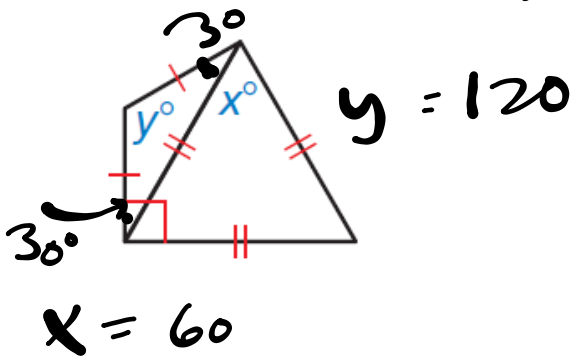
In the life



a. Explain how to prove that $\triangle QPS \cong \triangle PQR$.

b. Explain why $\triangle PQT$ is isosceles.

4. Find the values of x and y in the diagram.



5. In Example 4, show that $\triangle PTS \cong \triangle QTR$.

- **Response Logs:** Select from “When I am writing a proof ...” or “Tomorrow I need to find out ...” or “I wish I could”

