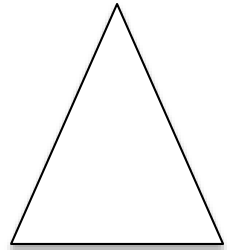


Geometry 5.4 Notes: Equilateral and Isosceles Triangles

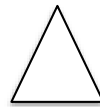
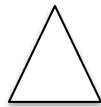
Isosceles Triangles: A triangle is isosceles when it has at least two congruent sides.

- The two congruent sides are called the _____
- The angle formed by the _____ is called the _____
- The third side is called the _____
- The two angles adjacent to the _____ are called the _____



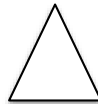
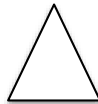
Base Angles Theorem

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



Converse of the Base Angles Theorem

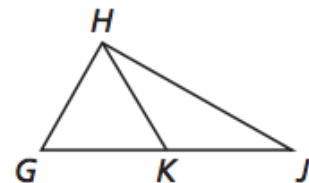
If two _____ of a triangle are congruent, then the _____ opposite them are congruent.



Example:

1. Copy and complete the statement. Use the diagram at right.

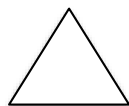
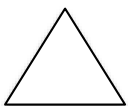
- a. If $\overline{HG} \cong \overline{HK}$, then $\angle \underline{\hspace{1cm}} \cong \angle \underline{\hspace{1cm}}$
- b. If $\angle KHJ \cong \angle KJH$, then $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$
- c. $\overline{HK} \cong \overline{KJ}$, $m\angle HKJ = 4x^\circ$ and $m\angle J = 2x^\circ$. Find $m\angle HKJ$.



REMEMBER: An equilateral triangle has three congruent sides.

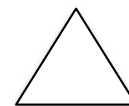
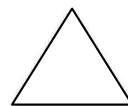
Corollary to the Base Angles Theorem

If a triangle is _____,
then it is _____.



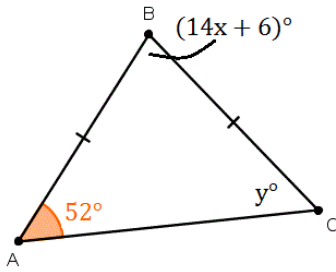
Corollary to the Converse of the Base Angles Theorem

If a triangle is _____,
then it is _____.

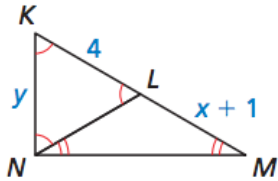


Example:

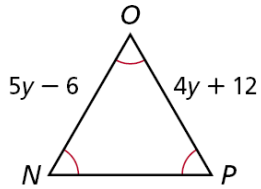
2. Find the values of x and y in the diagram.



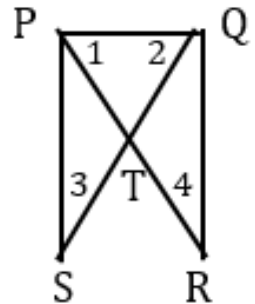
3. Find the values of x and y in the diagram.



4. Find the value of y in the diagram.



5. $\overline{PS} \cong \overline{QR}$ and $\angle QPS \cong \angle PQR$.
a. Prove that $\triangle QPS \cong \triangle PQR$



Statements	Reasons

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