Chapter 5
Congruent Triangles

Isosceles Triangle

Vertex angle

leg   **leg**
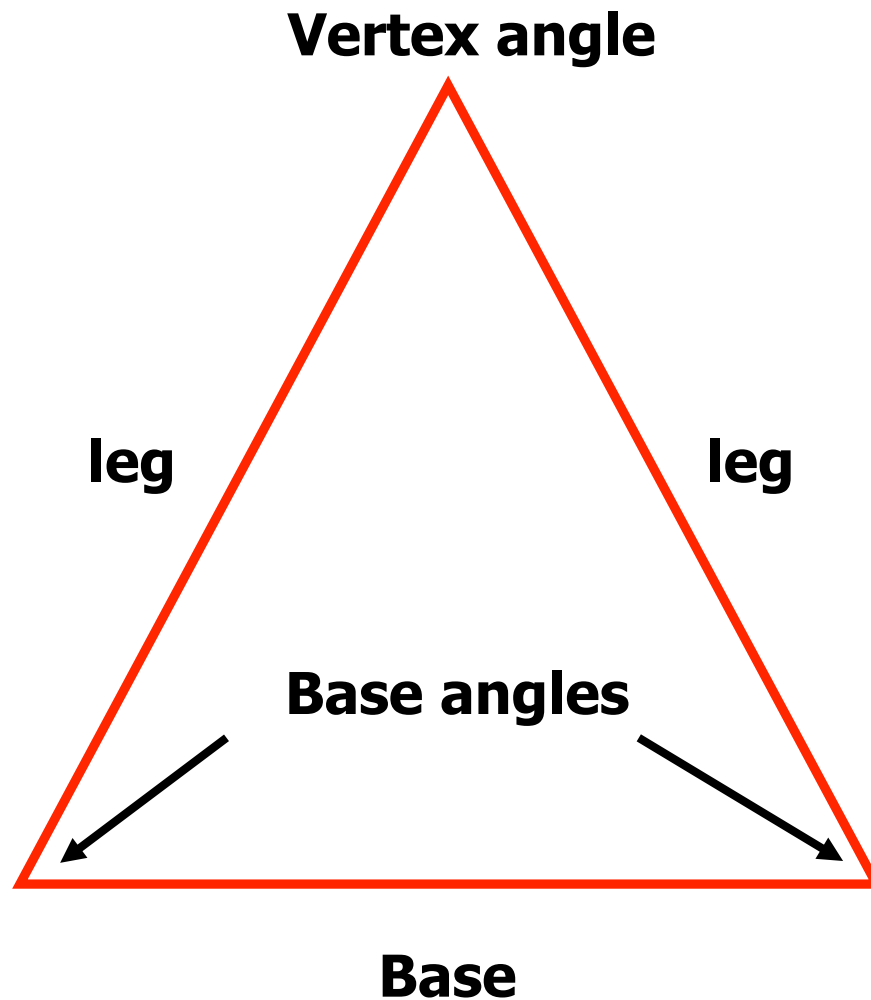
Base angles

Base

5.4 Equilateral and Isosceles Triangles
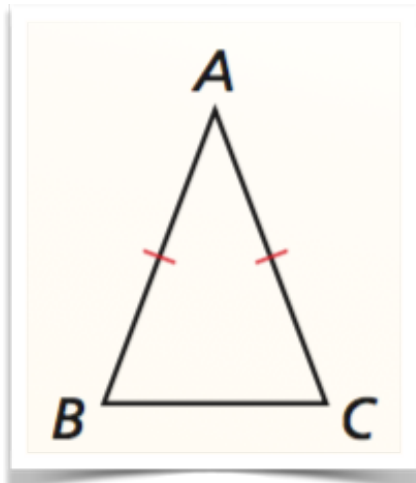
Theorems

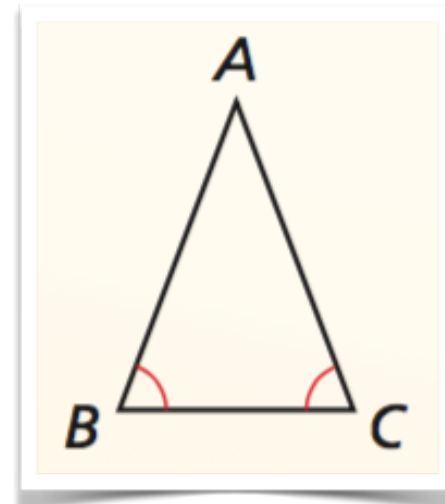|	
Base Angles Theorem	If two sides of a triangle are congruent, then the angles opposite them are congruent.
Converse of the Base Angles Theorem	If two angles of a triangle are congruent, then the sides opposite them are congruent.

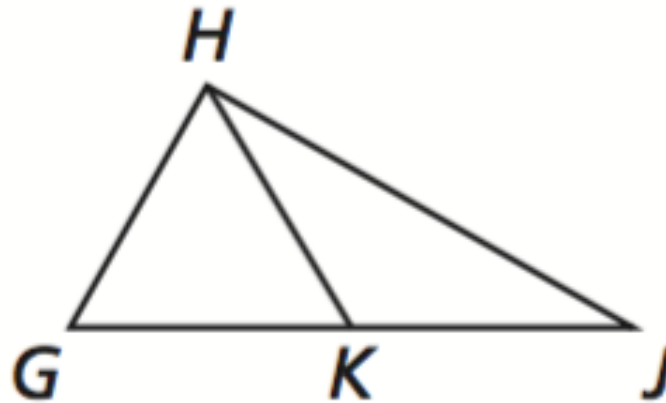If $\overline{AB} \cong \overline{AC}$, then $\angle B \cong \angle C$.

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

Complete the statements

H

G   K   J

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

2. If $\angle KHJ \cong \angle KJH$, then ____ $\cong$ ____.

5.4 Equilateral and Isosceles Triangles

Construct an Isosceles Triangle
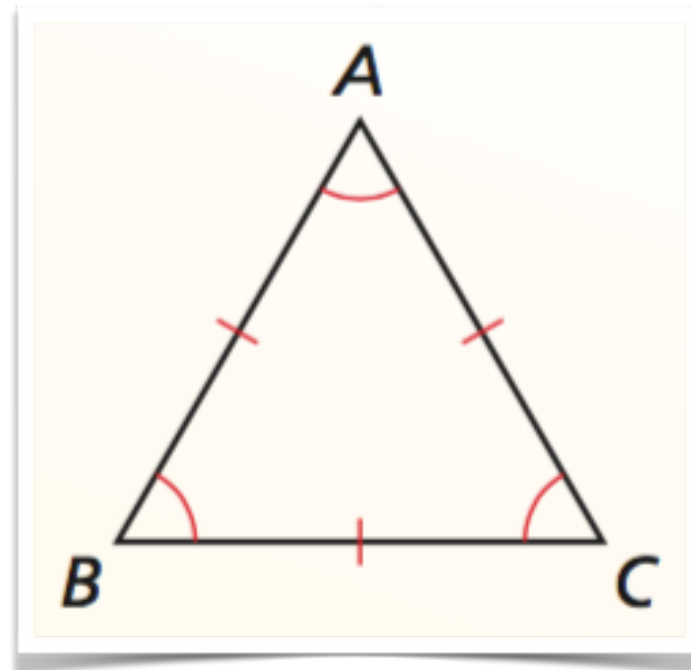
5.4 Equilateral and Isosceles Triangles

Theorems

Corollary to Base Angles Theorem	If a triangle is equilateral, then it is equiangular.
Corollary to the Converse of the Base Angles Theorem	If a triangle is equiangular, then it is equilateral.

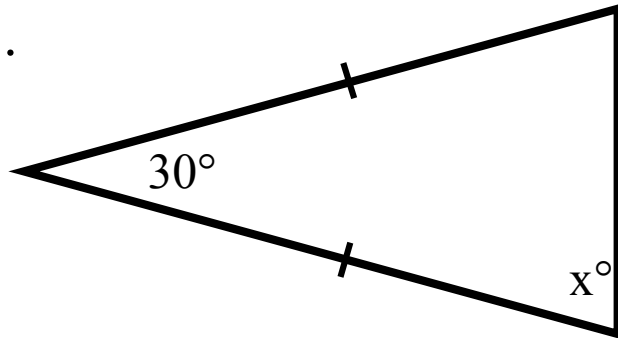# 5.4 Equilateral and Isosceles Triangles

Construct an Equilateral Triangle
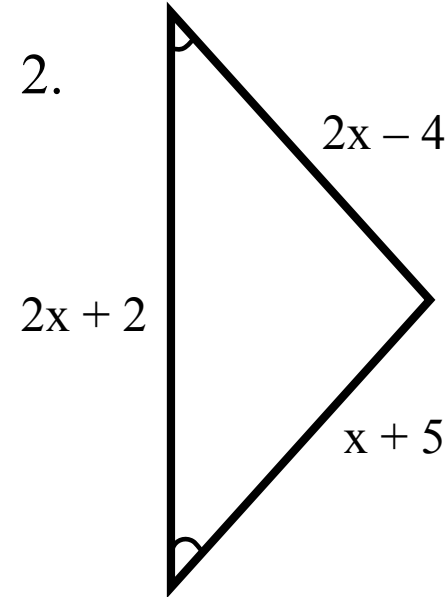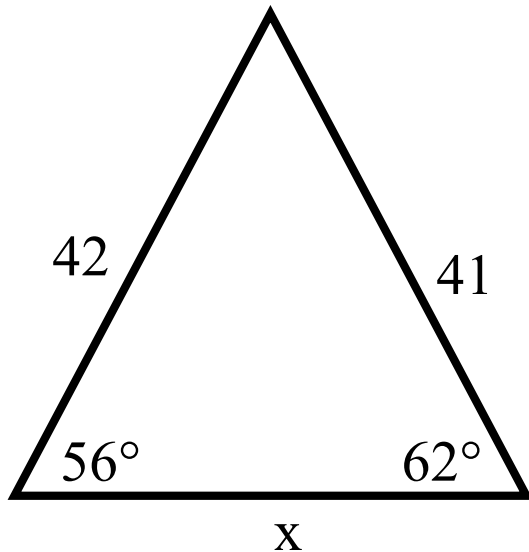
5.4 Equilateral and Isosceles Triangles

Solve for x

1.

30°

$x°$

2.

$2x - 4$

$2x + 2$

$x + 5$

3.

42

41

56°

62°

x

4.

$(90 - x)°$

$2x°$